THE MAGAZINE ABOUT RAILROADS • 35 CENTS

Trains

NOVEMBER, 1947

convenient morning departure from **CHICAGO**

convenient twilight departure from **ST. LOUIS**

290 GLIDING Miles "as the *Cardinal* flies"

NEW "CARDINAL" DAYTIME SERVICE

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Convenient connections at St. Louis to and from Southwest.

Already singing over the rails between Chicago and St. Louis, C & E I's crack new daytime flyer offers you a fast, silent, and smooth-as-a-lullaby ride in cool, air-conditioned comfort. Modern seating accommodations give you a choice of soft coach *recliners* or individual parlor *loungers.* The dinette-parlor car is the congenial center for delicious economy meals, tasty snacks, and cooling cocktails. C & E I's "CARDINAL" takes you there in real *floating* comfort, relaxed, and on convenient schedule.

CHICAGO & EASTERN ILLINOIS RAILROAD C&EI *The Chicago Line*

Trains

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"One-third of the railroad mileage in the world, and considerably more than one-third of the rail hauling capacity, is found in the 6 per cent of the earth's surface which makes up the continental United States. This one-third of the world's railroads furnishes the most abundant and cheapest land transportation in the world. This one-third of the world's railroads pays wages which are the highest railroad wages in the world and among the highest wages paid by any industry. And the service rendered is fully the equal, from the standpoint of adequacy, dependability, safety, and comfort, of any other transportation service in the world." — Robert V. Fletcher, Past President, A. A. R., in Atlantic Monthly.

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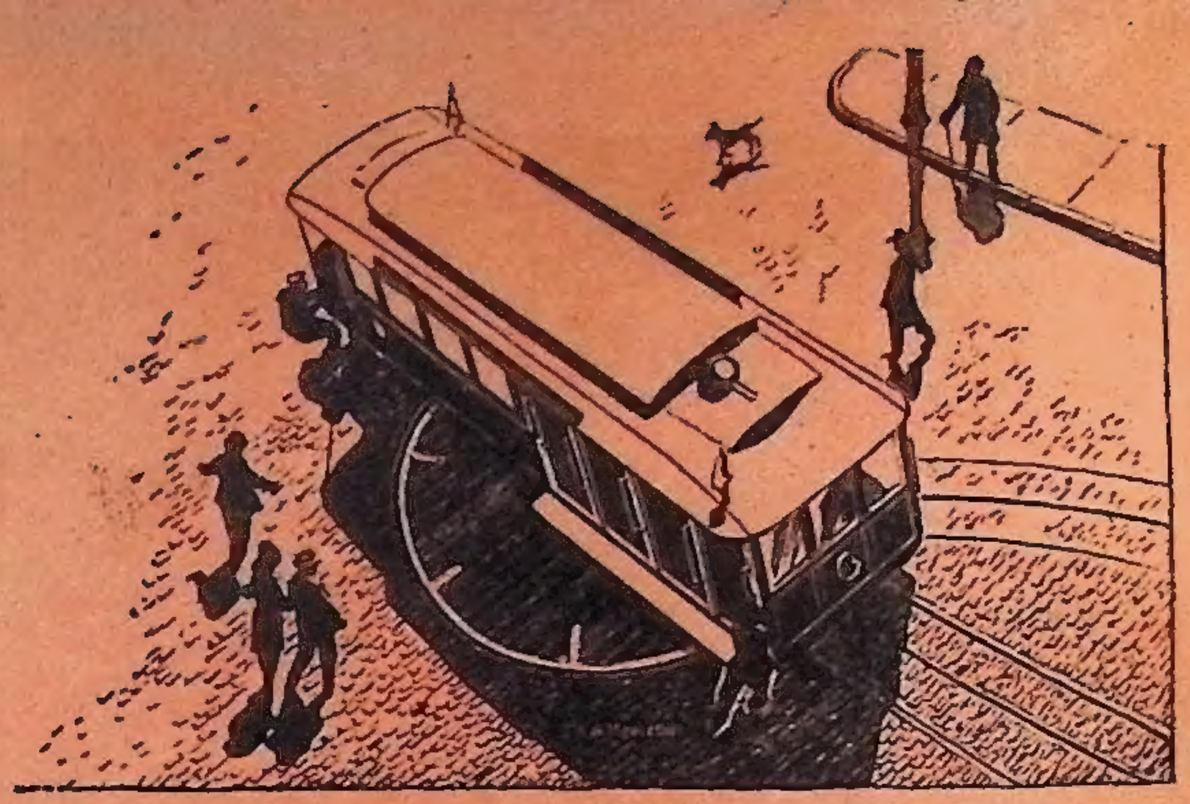

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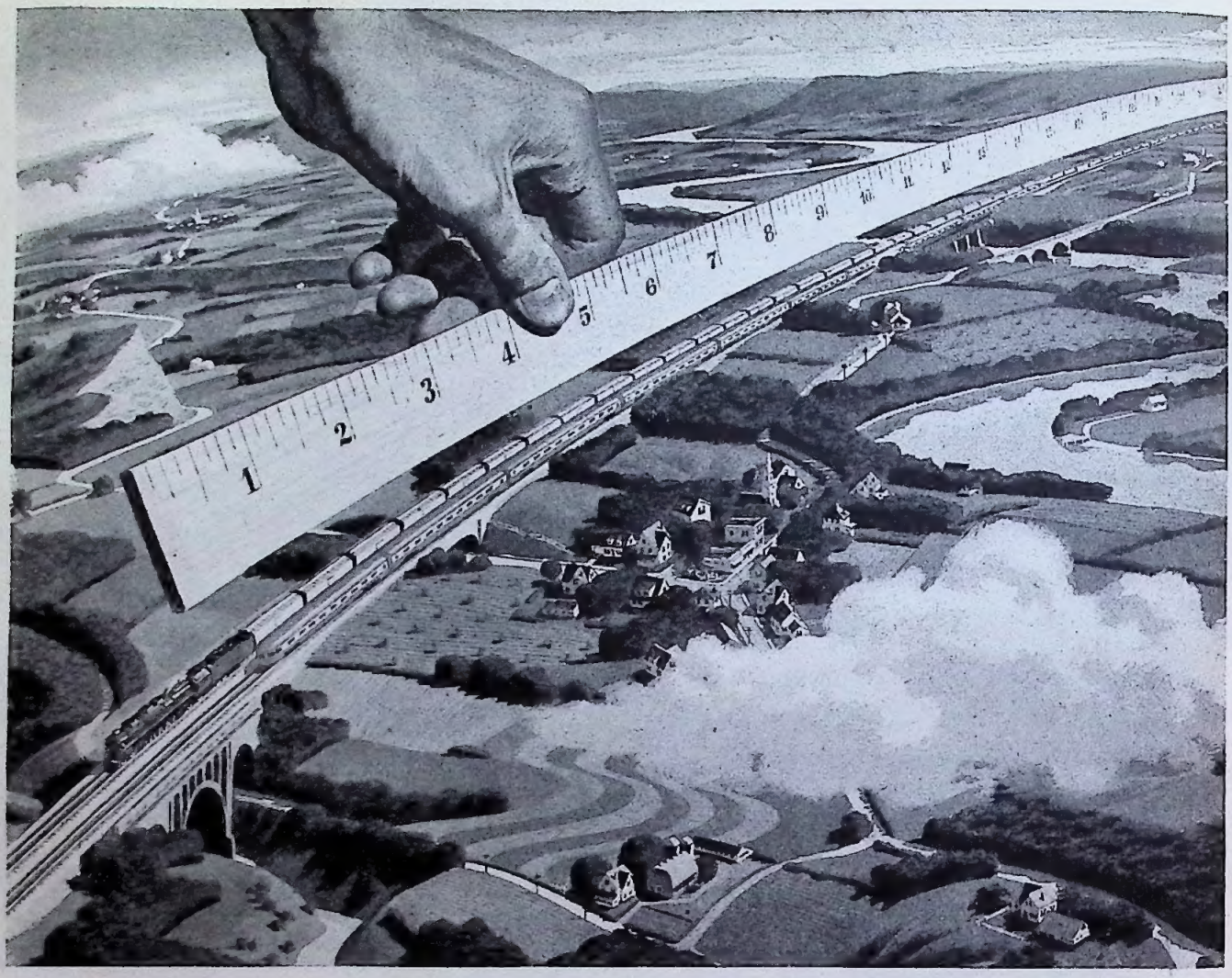


227,000-MILE YARDSTICK

Railroad progress speaks for itself. But it is not *measured* in talk.

It is measured by the exact yardstick of *results* . . . results which show up in better service to the public by all American railroads — 227,000 miles of them.

Results in better passenger service:

Railroads were the pioneers in air conditioning. Today practically every passenger car on principal runs is air conditioned. As far back as 1934, railroads introduced streamlined trains. And — although no passenger equipment could be built in the war years—today around 150 of these trains, sleek symbols of modern transportation, cover 100,000 miles every 24 hours. Many more are being built!

Results in more efficient freight service:

The amount of work done each day by the average freight car *practically doubled* between 1926 and 1946. And in the first five months of 1947 it was almost 10% more than in 1946! That's one important reason why railroads are able to handle the greatest peacetime traffic in history with fewer freight cars than they have had in many years!

Results in greater safety:

In 1946 collision, derailment, and other train accidents resulted in only one passenger fatality for each 996,000,000 miles traveled! (That's right — almost a *billion* miles!)

These facts are practical, down-to-earth yardsticks of railroad progress. Railroad progress is the product of many minds . . . of much planning . . . of constant research . . . of wide cooperation and the expenditure of billions of dollars. And in measuring progress, it's not promises but *results* that count.

TO CONTINUE THIS PROGRESS

. . . the railroads must earn an adequate income.

Over the last 25 years — and that includes the war years — the railroads have earned an average of only 3¾% annually on their net investment.

Most people think 6% would be no more than fair.

And 6% is the minimum the railroads need to continue to provide the kind of transportation you want.

Association of American Railroads

WASHINGTON 6, D. C.

"Gee, that's Eatin'"

This young man knows a good thing when he sees it.

Santa Fe dining cars are known the country over for that famous Fred Harvey food... courteous service... shining silver... linens as white as the snow of the Rockies.

Whether it's beefsteak or brook trout or pheasant *à la Périgueux* that catches your fancy on the menu, you'll have a meal to remember.

In fact, it's almost worth taking a trip just to eat a Fred Harvey meal on a Santa Fe diner!

May we count on serving you soon?

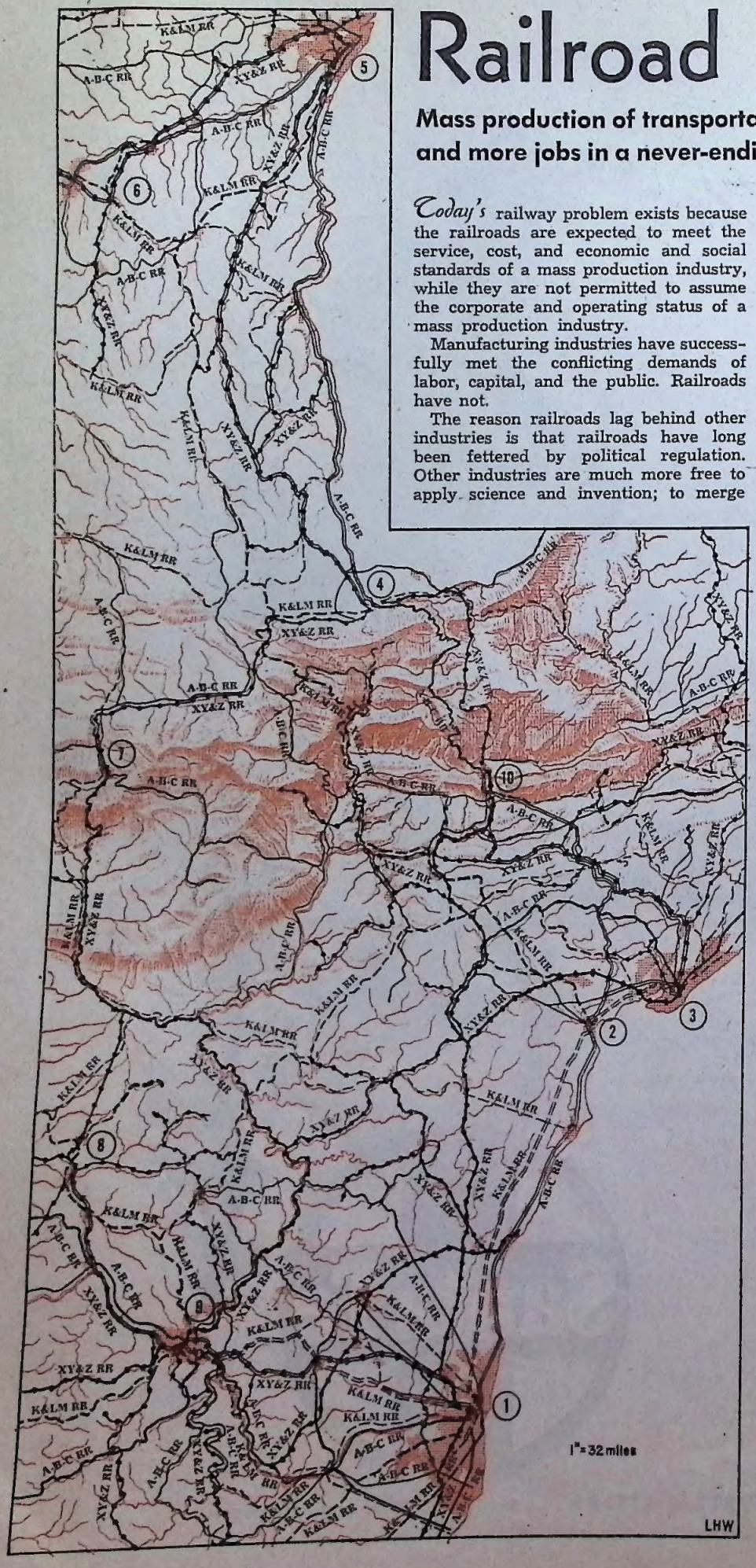
Santa Fe

SANTA FE SYSTEM LINES... Serving the West and Southwest

T. B. Gallaher, General Passenger Traffic Manager, Chicago 4

Railroad Consolida

Mass production of transportation would mean lower rates and more jobs in a never-ending cycle of benefits



Today's railway problem exists because the railroads are expected to meet the service, cost, and economic and social standards of a mass production industry, while they are not permitted to assume the corporate and operating status of a mass production industry.

Manufacturing industries have successfully met the conflicting demands of labor, capital, and the public. Railroads have not.

The reason railroads lag behind other industries is that railroads have long been fettered by political regulation. Other industries are much more free to apply science and invention; to merge so that capital is not wasted in duplication of effort but rather is applied to get the maximum returns from the minimum investment.

The railroads possess all the technical knowledge they need to solve their cost and service problems. But capital to carry out their plans is necessary; and capital is hard to get. Investors know that railroad management is not free to make fundamental changes in the principles of operation — changes which alone would justify and protect the investment required for a great program of modernization and development.

Railroads must be allowed to consolidate into a few large competitive corporations of regional dimensions so that they may function as a mass production industry.

"Mass production" does not merely mean doing large quantities of work; the railroads are doing that now. "Mass production" means doing *any* amount of work by methods which achieve the lowest possible combined costs for labor, materials, and capital. In the railroad industry, mass production would mean concentrating through traffic on intensively developed super-railroads instead of diffusing it over a mass of mainline mileage which cannot produce service of comparable standards and costs. It would mean running trains of greater capacity and on materially quickened schedules, while doing both at lesser unit costs. This would permit reducing rates to shippers and passengers yet providing more income for the investor.

It would mean more jobs, too. True, fewer workers could perform the same aggregate railway service that is now being performed. But it has been the invariable experience that whenever selling prices are substantially reduced while the quality of merchandise is improved, the markets expand and *increased* employment results.

Mass production of railroad transportation would ensure lower rates, better service, and more employment than will be possible as long as the rail mileage of the United States is distributed among so many separate companies.

Of course, there would be a temporary period of readjustment before employment increased. Railroad workers released from service during this period, or those given less desirable employment, should be adequately compensated over a stated period. *The protection of the worker must be made a condition precedent to any agreement to allow the railroads to merge.*

The immediate savings resulting from mass production railroading — and these savings would amount to hundreds of millions of dollars a year — should be divided among (1) the public, through rate readjustments; (2) labor, first through

tion

BY JOHN W. BARRIGER
President, the Monon Route.

employment protection and later through wages; (3) security holders.

Such a division of the savings would result in (1) more traffic because of lower rates; (2) more employment because of heavier traffic; (3) more capital because of higher returns.

Now we have started the ball rolling. With more capital the railroads can develop their mass production facilities. They can reduce grades and curves. They can improve locomotive utilization and also produce more transportation with each locomotive mile. They can run entire trains bound for a single destination and thus eliminate the intermediate switching which now delays shipments and increases costs.

It is obvious that such a development of the railroads would produce still cheaper transportation. Cheaper transportation would produce still more traffic. More traffic would produce more employment and more returns for the investors. In a healthy, well-ordered economy of free enterprise this is a never-ending process which builds the high road to prosperity and improved standards of living along which the United States has continually traveled except for brief interruptions.

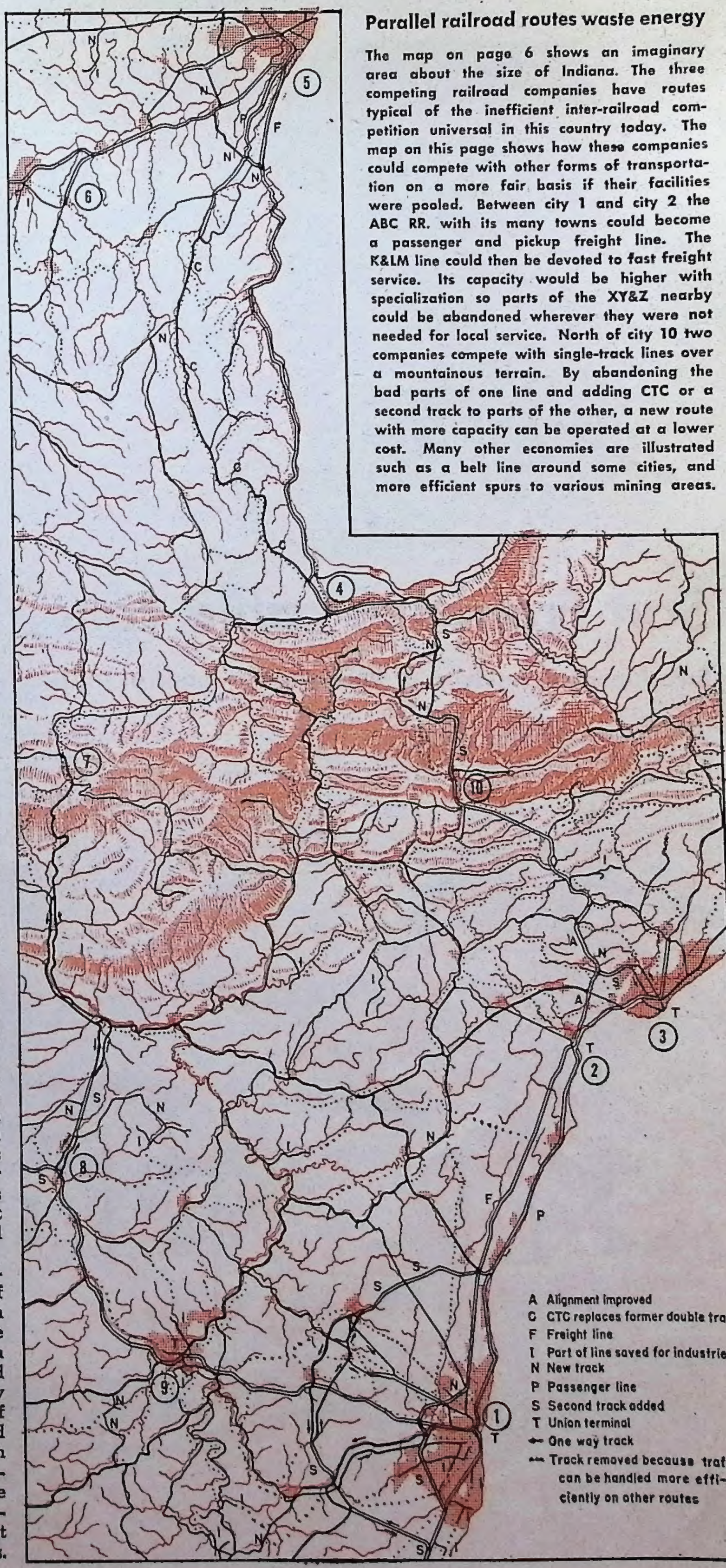
These are the direct benefits of mass production transportation. Indirectly, everyone would benefit even more. With lower freight rates on raw materials and finished products, manufacturing plants could reduce the price of their products. With lower prices — and this has been borne out in the past — more of those products would be sold. More help would be needed in the factories, so labor would benefit. Capital would benefit through increased returns. The consuming public would benefit through a higher standard of living.

American business management gave mass production to the nation and to the world. One large automobile factory can produce more cars and better cars at a lower price than a hundred small plants can produce at a high price. It is unfair and shortsighted to deny the railroads the right to make use of this great principle of corporate, financial and technical administration.

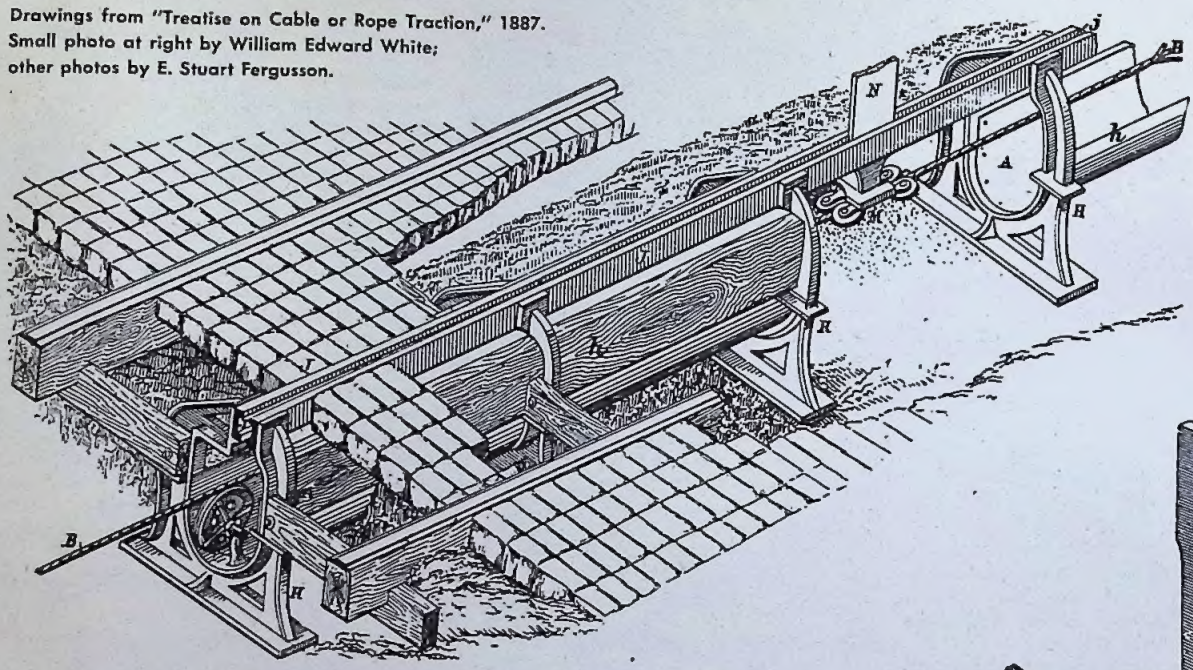
Mass production of railway transportation — that is, large scale consolidation of railroads into competitive systems within the three basic regions — would solve the railway problem of today and prevent a railway problem tomorrow. We need have no fear of a return to the railway monopolies of the past. Other forms of transportation — airplane, bus, truck, and pipe line — provide the competition which long ago broke up the monopolistic position of the railroads, and the Interstate Commerce Commission is the ever-faithful watchdog of the public interest in respect to service practices and to rates.

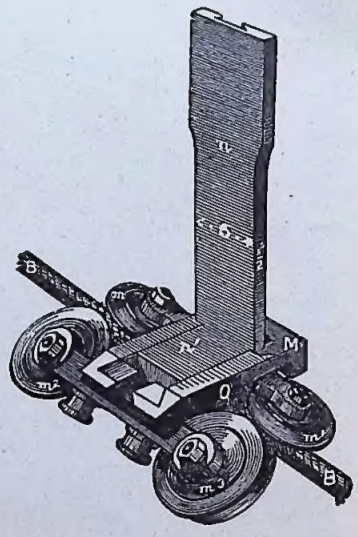
Parallel railroad routes waste energy

The map on page 6 shows an imaginary area about the size of Indiana. The three competing railroad companies have routes typical of the inefficient inter-railroad competition universal in this country today. The map on this page shows how these companies could compete with other forms of transportation on a more fair basis if their facilities were pooled. Between city 1 and city 2 the ABC RR. with its many towns could become a passenger and pickup freight line. The K&LM line could then be devoted to fast freight service. Its capacity would be higher with specialization so parts of the XY&Z nearby could be abandoned wherever they were not needed for local service. North of city 10 two companies compete with single-track lines over a mountainous terrain. By abandoning the bad parts of one line and adding CTC or a second track to parts of the other, a new route with more capacity can be operated at a lower cost. Many other economies are illustrated such as a belt line around some cities, and more efficient spurs to various mining areas.


A Alignment improved
C CTC replaces former double track
F Freight line
I Part of line saved for industries
N New track
P Passenger line
S Second track added
T Union terminal
One way track
Track removed because traffic can be handled more efficiently on other routes

Drawings from "Treatise on Cable or Rope Traction," 1887.
Small photo at right by William Edward White;
other photos by E. Stuart Fergusson.





San Francisco cable cars

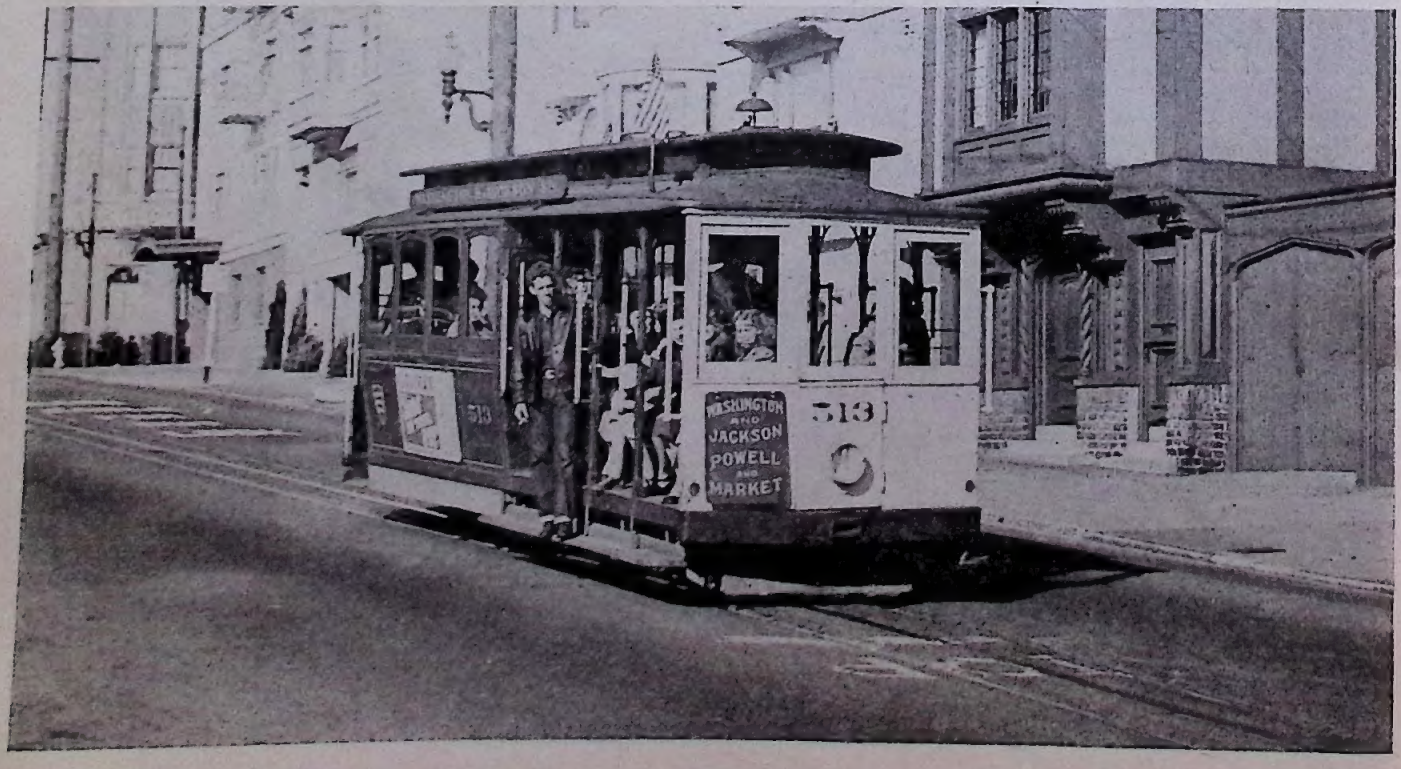
Sole American survivors of once popular mode of traction

It was four o'clock on the morning of August 1, 1873. The weather was dull and foggy and the rails were slippery from atmospheric moisture, perfect for the first trial of a completely new method of traction. The first of the San Francisco cable railways was being put into motion, heralding an era of meteoric development by cable-operated street railways in all parts of the world.

The haulage cable was set in motion by the stationary engine and appeared to run satisfactorily through the slotted track tube in which it was mounted on suitable pulleys. A dummy, or independent carriage, on which the gripping apparatus had been mounted, was brought out and the gripper lowered into the tube. Ropes were next attached to the dummy to test the brakes, for the cable railway must hold upon the steep grades of Clay Street. The cable railway passed the tests, but sceptics said it wouldn't work in more severe climates.

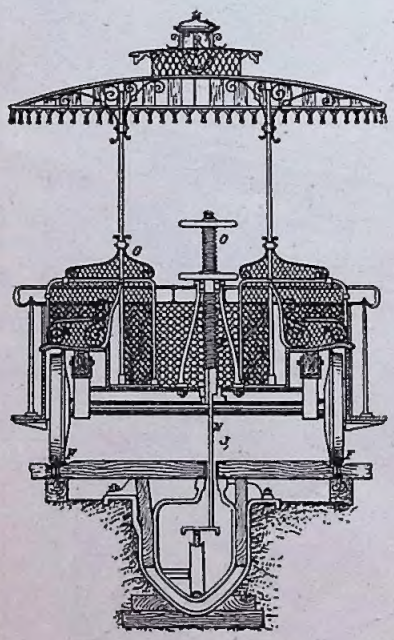
Universal acceptance was delayed until the successful operation of the State Street railway in Chicago nine years later.

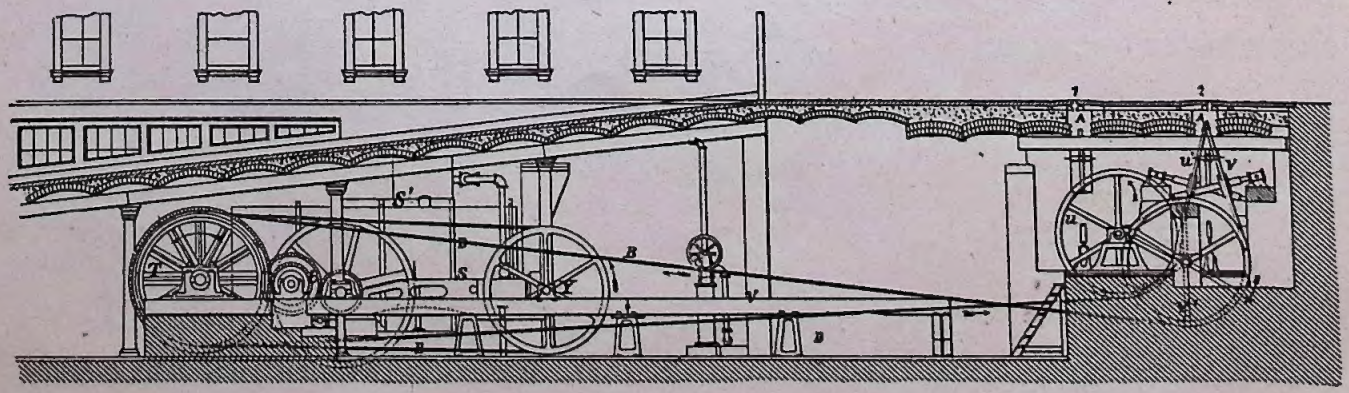
The growth of the cable car was helped by backing of the Society for the Prevention of Cruelty to Animals. Street railways were notoriously hard on horses,



and the average life of a railway horse was only 4½ years. But hardly had the cable railway won acceptance when an even greater boon to horses came along, the electric railway. Now the San Francisco cable lines are a lone and picturesque survivor of a remarkably ingenious system of traction. They are valuable chiefly as a tourist attraction, for no trip to San Francisco is complete without a ride up Nob Hill on a cable car. And unless the people of San Francisco vote to retain the cable cars in a November 4 referendum, this last colorful survivor of a bygone era will be gone, replaced by special twin-engine buses. Nothing, certainly not the slick modernism of buses, can replace the romance of the cable cars. Many people doubt that buses will be any better at climbing the steep hills (nearly 100 per cent grades) than the electric cars which the cables successfully fought off for so many years.

The line drawings on these pages are self-explanatory mechanical details from a contemporary description of the original San Francisco installation. Principal change since then is that the grip is now controlled by a lever rather than screw and wheel.





The 56-cent grand tour

BY CHARLES S. SMALL

If you can scrape together 56 cents of our inflated money, you can make the San Francisco Cable Car Grand Circuit Tour in a Sunday afternoon. It's not a bad idea to take along some color film.

Start at the corner of Market and Powell streets and take the Powell & Mason car. This will cost you 7 cents. After the car has been turned on the turntable, it grips the cable and starts up Nob Hill. At the summit, after receiving a clear board from the tower at California Street, it crosses the California Street line and descends to the base of Russian Hill. Then, from Mason Street, it angles over Columbus for a few blocks. This stretch has two cable-car tracks and two ordinary trolley tracks — a unique four-track line. The line ends a few blocks farther, on Taylor Street. Passengers help to turn the car on the turntable.

Return (another 7 cents, please) via the same line and get off at Mason and Jackson. The cable house and carbarn are located here, and usually the crew will let you have a look at the inner workings. The upper level of the carbarn features a gasoline dinkey and another turntable. In front of the carbarn there is a stretch of three-rail track, standard and narrow gauge using a common rail.

You can spend a profitable hour or so nosing around. When you have finished, spend another 7 cents and take an outbound car on Jackson Street to the end of the line. The loop at the end is a good spot for pictures, since the sun is not blocked by buildings.

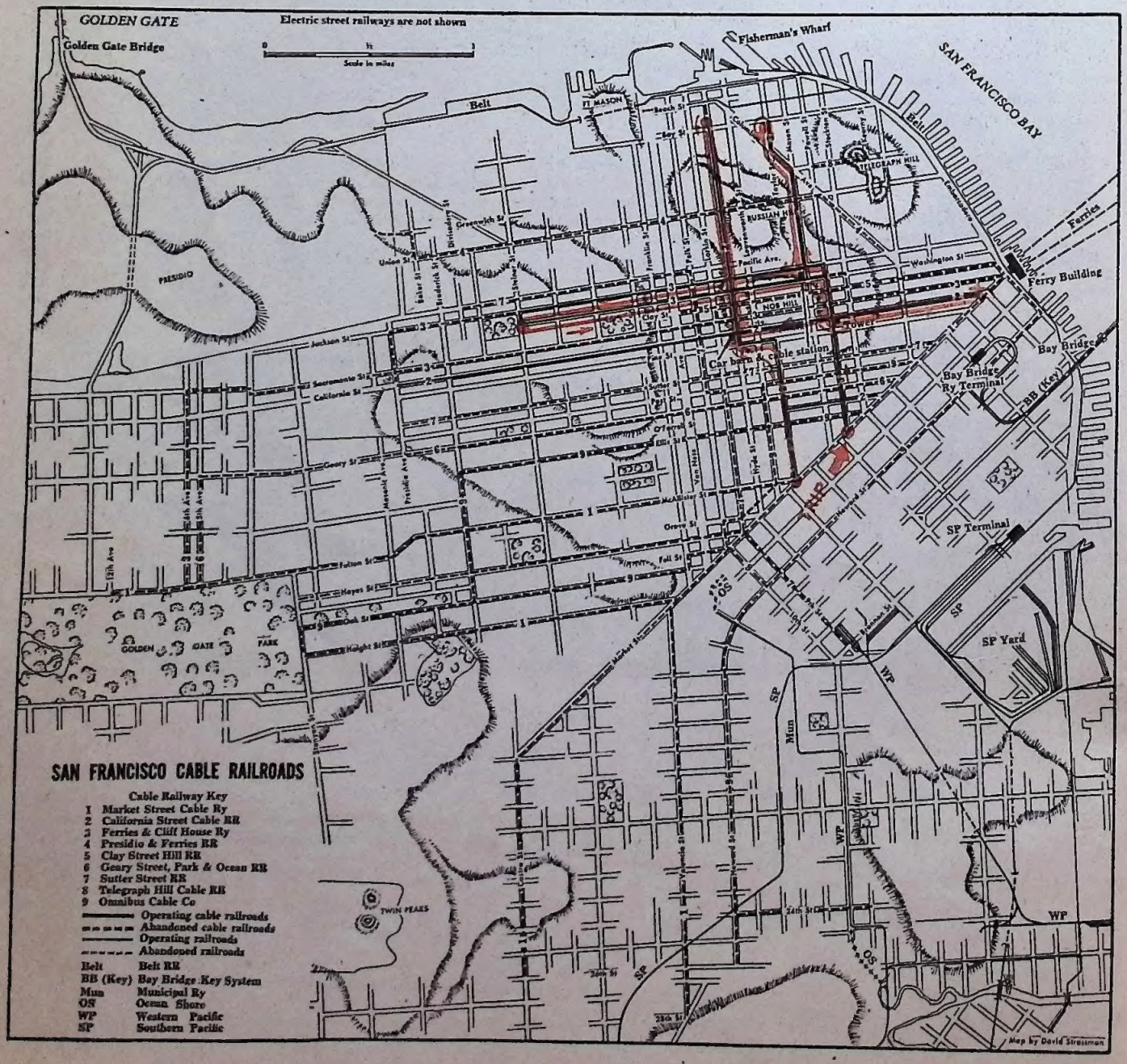
Pay another fare to return via Washington Street. Notice the color-light signals at the Hyde Street crossing. Passing the cable house, you run over a tricky three-rail double-track stretch. Continue to California Street and disembark.

Your next 7-cent move is to ride down Nob Hill in a California Street car. This takes you almost to the ferry terminal. A bit of scrutiny here will reveal where the tracks of the now-defunct Sacramento-Clay Street line looped around in front of the ferry building.

Return via the same line. Remember to ask for a transfer when you pay your 7 cents this time. Get off at Hyde Street and inspect this line's cable apparatus and carbarn.

Using your transfer, board an outbound Hyde Street car. It will cross the Washington and Jackson lines and climb up to the top of Russian Hill. The summit at Lombard Street presents the best view to be had anywhere along the cable lines. A stop here is a "must." From the summit to the bottom of the hill the line drops down what appears to be a 100 per cent grade. It's worth another 7 cents to ride down this hill.

Returning, take the Hyde Street car to its terminal at O'Farrell and Market. The only part of the systems you will have missed is the level, straight, and therefore dull part of the California Street line beyond Hyde Street.



The Geary Street Cable Tramway, San Francisco, 1887

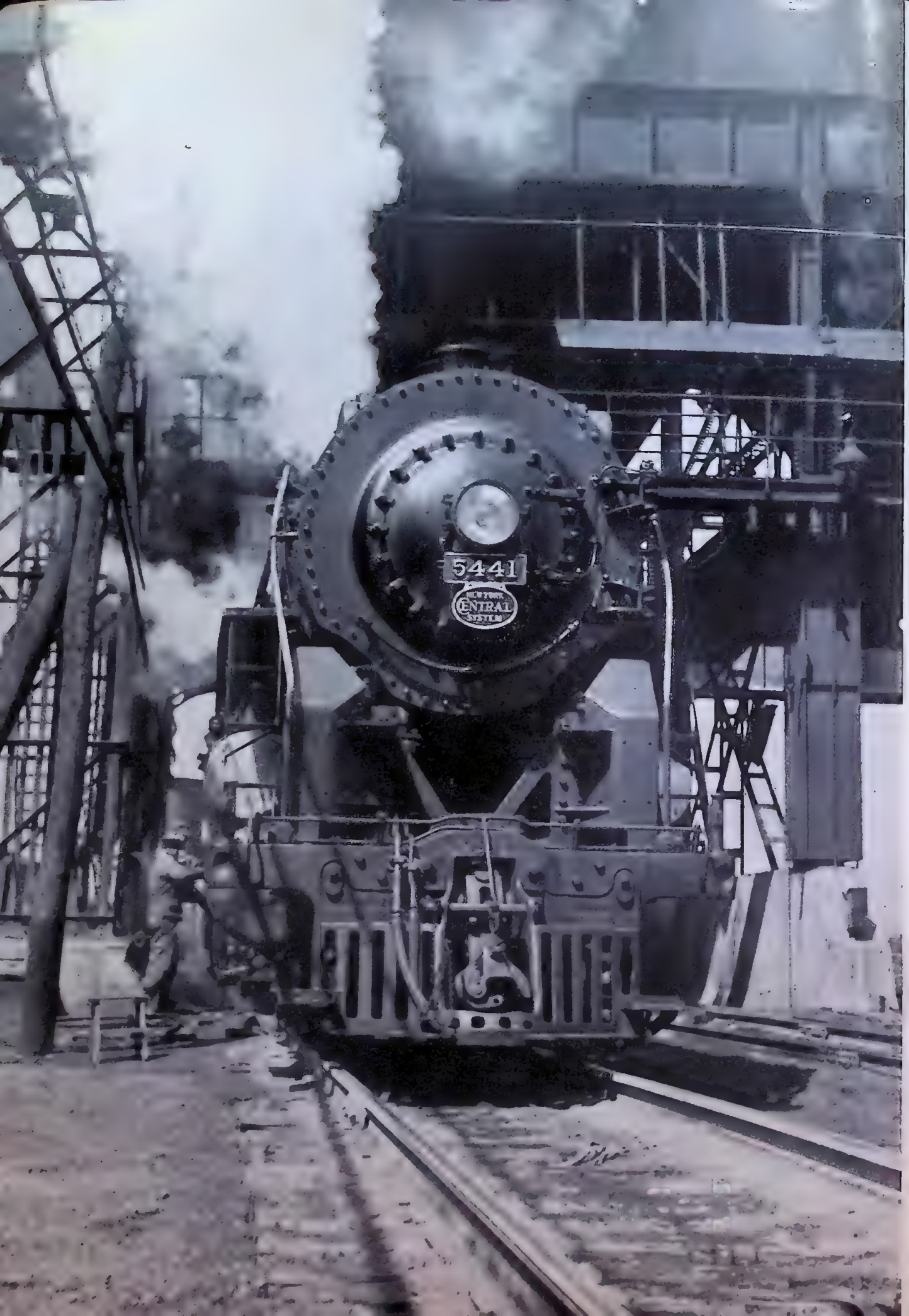
The men who planned the original San Francisco cable railway thought it best not to build the grip mechanism into the passenger-carrying car, so they built extra dummy cars, each just big enough to carry the grip and a man to operate it. Later the grip cars were built larger with seats around the sides and ends as shown here. The trailer passenger cars were similar to ordinary horsecars, and indeed were sometimes pulled by horses over extensions of the cable routes. Present day cable cars are single units.

Servicing the New York Central's Hudson

Photo on page 12.

This Hudson-type locomotive is coaling up at the Central's fuel plant in Wayneport, N. Y., 14 miles east of Rochester. The famous 4-6-4's are probably the most photographed engines on the New York Central. Head-end pictures of these Hudsons have been used on company advertising literature for years. Now they are almost a symbol of the road itself. Until recently, when they were partially displaced by diesels and the more recent Niagara 4-8-4's, these beautiful steamers were a common sight at the head end of the *Twentieth Century*. The Hudson type was first introduced on the New York Central in 1927, and in less than five years over 200 were operating on the system. Note the sheaths over the air pumps and the drop coupler, both characteristic of the Hudson. The engine number and Central insignia just below the headlight are also typical practice on NYC engines. By sinking the coupler so that it is flush with the pilot, any foreign object on the track is bounced clear instead of sticking to the front of the locomotive. Wayneport is a very important coaling and watering station on the road's main line.

Henry J. Trede.


5441
NEW YORK
CENTRAL
SYSTEM

Coal supports the Norfolk & Western

10,000-ton trainloads of solid fuels move east and west from the bituminous coal mines of southern Virginia, West Virginia and eastern Kentucky — 180,000 tons a day

BY ERIC A. GRUBB

It's 5:30 on a murky spring morning as we cross the narrow foot bridge spanning the Norfolk & Western Railway yards at Williamson, W. Va. Day is just breaking, and below we can make out great black strings of coal gondolas and hoppers stretching endlessly into the growing light. Everywhere switchmen's lanterns are swinging and couplers are bumping as a husky squad of snorting Mallets jostles loaded cars into heavy road trains and assembles cuts of empties for early-morning delivery to the nearby mine fields.

This is the Norfolk & Western's western portal to the great bituminous coal fields of southern Virginia, West Virginia, and eastern Kentucky, and the marshaling point for over 75 per cent of its vast coal traffic. All around the clock long grimy caravans rumble in from the mine fields to be switched and concentrated into tonnage trains for movement to the great eastbound and westbound classification yards at Roanoke, Va., and Portsmouth, O. Back from Roanoke and Portsmouth roll countless strings of empties to be inspected and made up into trains for forwarding to the various mining districts.

We're headed for Track One in the eastbound yard, where engine 2001, a whacking big 2-8-8-2 Mallet compound, is backing onto 132 cars of coal — 10,430 tons! — bound for Roanoke. There it will be classified for distribution to Middle Atlantic and New England states. We have the proper credentials, so we'll climb aboard this mile-long train and watch operations from both the rear and head ends as it rides 200 miles of twisting river grade to hurdle the Appalachians between Williamson and Roanoke. We'll see what a job it is to get one of these heavy trains over the road. Starting the load, keeping it under way, leashing its tremendous momentum for variations in grade and curvature — all these are major operations when the tonnage runs from 5000 up. Before the day is over we'll be well mantled with coal dust, but we'll have discovered what a task it is for one railroad to move nearly a tenth of all the bituminous coal mined in the country.

Here comes William Lusk, our conductor, with his clearance and a handful of waybills. He is coming down from the head end after delivering copies of the orders and comparing watches with the engineer and brakeman. His work really began when he reported for duty at the yard office at 5:30, about three-quarters of an hour before scheduled leaving time. After picking up his wheel report, he checked his watch against the standard clock in the office and studied the bulletin board for orders placed there since his last run. He also looked over the train register to check on movements in and out of the terminal.

We follow our conductor down to the caboose and swing aboard just as engine 2004 — another big Mallet compound — couples onto the tail end for the 63-mile shove up the river grade to Farm. Inside, we find Flagman Cecil Hager setting a welcome fire in the pot-bellied stove. We've a few minutes to wait for completion of the air test, so let's examine quickly something of the Norfolk & Western's make-up and plant and some of the general operations performed in moving its coal traffic.

The main line extends from Norfolk, Va., at the entrance to Chesapeake Bay, westward to Columbus and Cincinnati, O., near the largest fuel-consuming sections of the country. The distance from Norfolk to Columbus is 663 miles, and over this double-track route moves the greater part of the road's coal tonnage. Additional lines branch southward to Bristol and Norton, Va.; Winston-Salem and Durham, N. C.; and northward to Hagerstown, Md. The entire system is comprised of 2103 miles of main line and branches, 630 miles of second track, 15 miles of third track, and 1794 miles of sidings and yard tracks.

The Norfolk & Western is not a big railroad from the standpoint of geographic expanse. But when it comes to those factors that make a railroad grow and thrive — items such as traffic density, operating efficiency, methods of maintenance and standards of equipment — the N&W measures right up to the tallest giants. Stand beside its rails and you'll see a panorama of diversified operations hard to beat on any of the railroads in the land. You'll see mile-long trains of merchandise and coal, streamlined passenger trains, and strings of big steel empties rolling back to the mine fields. You'll see huge inland and ocean terminals, sprawling classification yards, accurate scales, powerful articulated locomotives, and a great shop which builds all the railway's rolling stock.

About midway between Norfolk and

The Olga No. 1 tipple of the Carter Coal Company at Coalwood, W. Va., is typical of the coal-grading plants in Virginia and West Virginia. Cars are spotted beneath the tipple to receive the coal as it is graded for size.

All photos courtesy Norfolk & Western.

Norfolk & Western maintains extensive dock facilities at Lambert Point, Va. Cars are classified as to grade of coal, are weighed, and then are moved to the piers. Here the coal is dumped into the holds of ocean ships.

Columbus this steel highway pierces the very backbone of the southern Appalachians. Here is one of the richest stores of both high- and low-volatile coal in the world — and the source of 3 out of every 4 tons of freight on the Norfolk & Western as well as 60 cents out of every dollar of its freight revenue. One hundred thirty-four mining operations are located on the railway's main line and branches for a distance of 175 miles extending westward from Bluefield, W. Va., almost to the Ohio River at Kenova, W. Va. Every 24 hours some 3000 loaded gondolas come rumbling over N&W rails with approximately 180,000 tons of bituminous coal — the equivalent of a single train more than 20 miles long.

It all began in 1881 when F. J. Kimball, then vice-president of the N&W, ignored the reports of geologists and led an exploration party into the heavily wooded mountains of southwestern Virginia. There he discovered what later became known as the famous Pocahontas No. 3 seam of coal which was 12 feet thick at the point of discovery. Immediately the railway began building a line from a point, now Radford, Va., 100 miles westward to the new coal field. The first carload of coal was shipped on March 12, 1883. The line was formally opened on May 21, 1883, and during the rest of the year 100,000 tons were moved eastward to tidewater at Norfolk.

With the completion of a line from the coal fields westward to the Ohio River in 1889, superior bituminous coals began to move freely to all the great fuel-consuming markets of the world in steadily increasing quantities. In 1943, the railway's greatest coal year, the tonnage had climbed to 54,400,000 tons. This traffic has produced an unusual degree of financial success for the Norfolk & Western.

To maintain its "Precision Transportation" — the railway's slogan — a far-sighted management has applied sound business principles down through the years to build up a physical plant which would be adequate for the traffic of tomorrow as well as that of today. Of the total of 4543 miles of track, 3258 miles, or nearly 72 per cent, are laid with 130- or 131-pound rail on rock ballast. This roadbed is superbly maintained to withstand the punishment of the heavy coal trains. All trains are protected by automatic block signals of the position-light or semaphore types, and in addition 320 miles of line are operated by centralized traffic control.

N&W's terminal facilities are thoroughly modern and adequate. Large classification yards for the quick, accurate weighing and dispatching of coal are maintained at Bluefield, W. Va.; Williamson, W. Va.; Portsmouth, O.; Roanoke, Va.; and at the port of Norfolk (Lambert Point), Va. Yard capacities at these points range from 10,300 cars at Portsmouth — one of the most extensive freight yards in the country — to 2900 cars at Bluefield.

The flow of empties back to the mines is skillfully dovetailed with the outgoing movement. Each day the mine operators tell the car distributor at Bluefield or Williamson how many loads are expected to leave the tipples at a certain time and how many empties are required for the next day's loading. Individual mines vary in capacity; the larger ones load 100 to 175 50-ton cars a day. Trains of empties start out early in the morning from Bluefield and Williamson at the eastern and western borders of the coal fields and move first to assembly yards. These assembly yards are strategically located on the main line to serve as a base from which switching and classification operations can be conducted to and from the mines.

From the assembly yards mine-run crews shuttle back and forth over a network of feeder lines, distributing the empties to the tipples and hauling out the loaded cars. At the assembly points the loads are classified for east or west movement and made up into solid trains bound for the concentration yards at Bluefield and Williamson. There they are built into tonnage trains and moved on to Roanoke or Portsmouth for final classification.

Portsmouth is the classification point for westbound coal. Here the cars are sorted for distribution to the railway's Cincinnati and Columbus terminals, where connections are made for delivery to the West, Midwest, and Great Lakes region. During recent years, about 68 per cent of the total tonnage mined along the Norfolk & Western has moved west to Portsmouth.

Roanoke, with a capacity of 7400 cars, is the classification point for eastbound coal. From here approximately 19 per cent travels on to the tidewater terminal at Lambert Point (Norfolk), Va., where it is transferred to ships which carry it all over the world. The remainder moves into the Carolinas and the Southeast via Winston-Salem, Durham, and other gateways, or goes up the 240-mile Shenandoah Valley line to Hagerstown, Md., for distribution to Middle Atlantic and New England states.

Under the Norfolk & Western's method of consigning and waybilling, cars may be consigned at the mine through to their destination, or may be forwarded to weighing points on "mine tags." Most eastbound coal is weighed and billed at Roanoke and westbound coal at Portsmouth. In the case of loads destined for points east of Portsmouth, weighing and billing is done at Williamson; cars headed for points between the mines and Roanoke are weighed and billed at Bluefield.

The coal is generally sold and the freight charges assessed on railroad scale weights. The most modern and accurate scales that can be obtained are maintained by the railway at its various classification centers. Weighing is done by men especially trained for that work, and the weights are typed on the original mine tags by an automatic recorder, thus assuring accuracy. Scales are tested daily and balanced frequently by the

N&W's extensive shops at Roanoke, Va., build the railroad's motive power. Roundhouse and car storage facilities are handy to the station. The railroad radiates in four directions from Roanoke, which is its headquarters.

railway's scale department, which has its own shop and repair facilities and its own master scale located at Roanoke. This master scale is one of but 19 existing in the United States at the present time. Sixteen are owned by railroads, two by state governments, and one by the National Bureau of Standards.

Included in the diversity of equipment necessary to handle the N&W's immense volume of coal are 49,000 gondolas and hoppers ranging from 50- to 90-ton capacity, and 313 freight locomotives of exceptionally rugged design. Car shortages on the Norfolk & Western have been unknown for many years, including those of World War II.

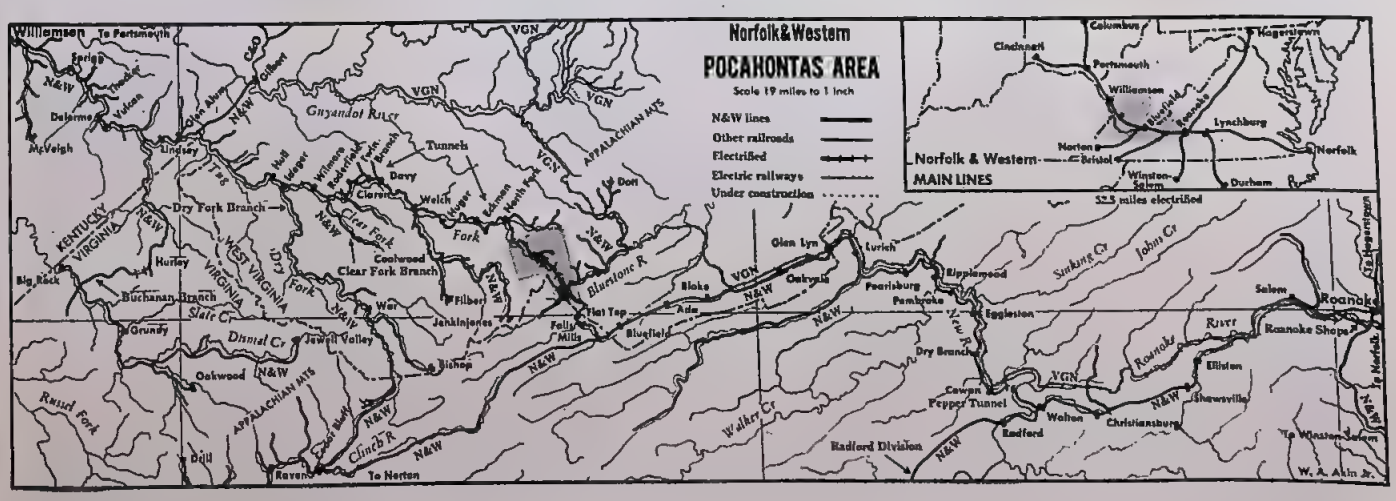
Mechanically the Norfolk & Western is characterized by its burly 2-8-8-2 compound Mallets. This type of power is particularly suited to the road's topography and traffic, and here you will find it advanced to its highest state of perfection and efficiency. At a time when other railroads were abandoning the compound engine, the Norfolk & Western embarked on a program of modernization and research to get the most out of this type of motive power. Because its roots are so firmly embedded in the coal business, the N&W is naturally much interested in further increasing the efficiency of the coal-burning locomotive, and has constantly strived through modernization and improved maintenance to make it equal in economy of operation to other types of railroad motive power.

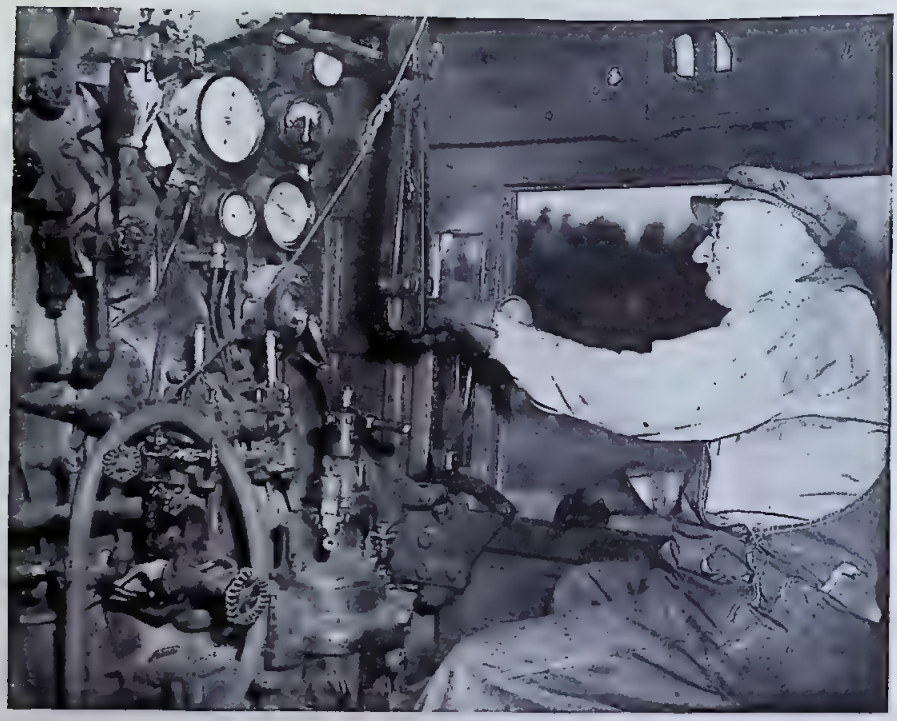
In addition to compound Mallets, the Norfolk & Western's freight-power roster lists 35 single-expansion 2-6-6-4 combination freight and passenger locomotives of the most modern design, and 16 big electric locomotives for work on the steep mountain grades in the coal fields. Thirty-one per cent of the railway's present fleet of steam freight locomotives has been built within the past 11 years. These were all constructed at the road's own Roanoke Shops and equipped with roller bearings and mechanical lubricators as well as fittings for pressure lubrication. Through the modern methods of servicing which were described in April TRAINS, all these locomotives turn in a remarkable record of availability.

The services of the Norfolk & Western extend far beyond its primary concern with the economical and efficient transportation of coal from mine to consumer. The railway also renders effective service in every phase of coal production, distribution, and consumption. Through its coal bureaus, which are located at strategic points throughout the nation and manned by carefully trained fuel experts, the railway is constantly assisting in the solution of numerous fuel problems for producers, distributors, and consumers.

In the field of passenger service, the Norfolk & Western is as thoroughly modern and progressive as in the handling of its coal traffic. Approximately 100 passenger trains are operated over its rails every day. Over the main line between Norfolk and Cincinnati and Columbus you can ride such fliers as the all-coach, daylight, luxury streamliner *Powhatan Arrow;* the overnight *Pocahontas,* named after the famous coal district; and the *Cavalier.* These trains are all powered by sleek torpedo-streamlined 4-8-4 locomotives of the J class, designed and built at the Roanoke Shops. They are among the most striking engines in the country today, and their performance over the steep mountain grades with heavy passenger trains is as spectacular as their general appearance.

Now the air gauge in the caboose is registering 80 pounds pressure and we





The cab of a class Y-6 Mallet contains a bewildering array of gauges, valves, throttle, brake valves, pipes and hoses. The engineer has his hand on the throttle; he toots the whistle by pulling knotted rope to his left.

are ready to highball. The time is 6:23. Two crisp blasts crack from the whistle of the 2001 on the head end and at once Engineer Ackers on the rear acknowledges with a heave on his throttle. There is a roar of steam, a blast from the stack, and 16 clawing drivers shove the pusher against that mile of protesting tonnage.

Slowly, steadily, we begin to move. Getting 10,000 tons under way smoothly and easily is ordinarily a major feat, but with two Mallets like these Y-3's it's done so quickly and efficiently that the whole operation seems almost effortless. In our 132-car train, "slack action" adds up to about two car-lengths. If let loose, it would play havoc with the draft gear; so the two locomotives bite into the starting job simultaneously to keep drawbar strain down to a minimum. The lead engine draws half the load while the pusher shoves the other half.

In the space of a dozen or so car-lengths our speed is up to 4 miles an hour, and the Mallets are switched over from simple to compound operation. Nine minutes from the start we're moving right along through the east end of the yard at a steady 20. The pusher keeps shoving at full capacity, but the engineer up front has eased off to control the speed of the train until he catches the indication on the semaphore governing movement from the yard onto the main.

It's "high green" for a clear track ahead. We snake out onto the main line to face the first lap on the long jaunt over the Appalachians to Roanoke — 63 miles of river grade winding along the banks of Tug Fork of the Big Sandy River. Flagman Hager climbs up onto his padded cushion in the cupola to keep a watchful eye on the train. Conductor Lusk settles down to work on his wheel report, copying the car numbers into his conductor's book for his own records.

Let's take a closer look at the wheel report. It is a large ruled sheet showing the entire consist of the train from engine to caboose. This consist has already been wired ahead to Bluefield so that the cars can be classified quickly upon arrival. There are spaces at the top of the sheet for recording the total number of cars in the train, engine number and engineer's name, conductor's name, division, direction, actual leaving time, tonnage out of the initial point, and tonnage at the end of the trip. Below this heading are places for listing the number of each car in the train, its contents, net weight, and gross weight. On the back is space for switching data, a weather report, and the conductor's signature.

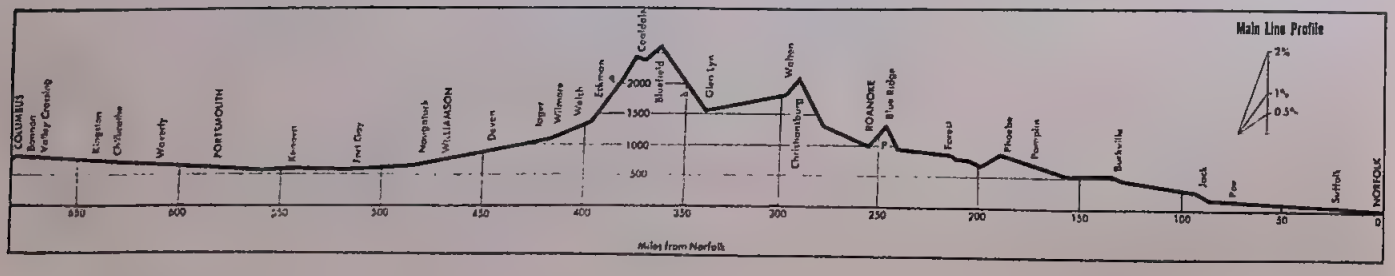
The wheel report is made out at initial points by agents and yardmasters and is picked up by the conductor at the yard office. At the end of his run the conductor hands the report over to the agent or yardmaster at the terminal office and receives a signature of receipt for it in his train book. The report is always supplied in triplicate. Sheets 1 and 2 are sent on at once to the superintendent of car service. Sheet 3 is retained by the terminal office as a record of cars received.

After his clerical work is completed, Conductor Lusk climbs into the cupola to assist the flagman in watching the train. Up on the head end, Brakeman Parsley is also keeping watch on the cars from his cupola atop the tender. Safe operation demands constant vigil on the part of every employee. Together with its own scrutiny, the crew of every train relies upon signals from trackmen and section workers, passing train crews, and the operators in every depot along the route to assist in detecting hotboxes, sticking brakes, dragging rigging, or other trouble. In addition to this constant scrutiny while en route, the trains are rigidly inspected at every regular stop and their journal boxes are given special attention at divisional terminals. There must be no lint grab, the filler must be one inch below the center line, and oil grooves must be open.

Modern equipment also plays an important part in the safe operation of these great coal trains. The biggest single role is played by the new Westinghouse AB freight brake, and all coal equipment has this improved stopping device. All cars are equipped, too, with rolled-steel wheels, power hand brakes and high-speed trucks.

At 6:49 we're blasting around the curve through Matewan, hitting 30 miles an hour. Nine miles have been consumed by the two locomotives since leaving Williamson, and now they've got their 10,000-ton burden up to its top speed for the river grade. The rails ascend at mostly 0.4 per cent for 51.2 miles from Williamson to Wilmore. Now, with their throttles shoved in to the two-thirds point on the quadrants and reverse bars adjusted for about 65 per cent cutoff, the enginemen can hold this maximum speed without much difficulty.

These Y-3 Mallets are real veterans at the job of moving coal. The first lot of 31 was received in 1919, and in two years they had proved themselves so well that the railway supplemented them with 20 more, identical in design. Since that time the Y-class fleet has been expanded to a total of 141 engines, ranging from the 30-year-old Y-3's to the 5-year-old Y-6a's. Although these locomotives are all practically identical in basic design, the 70 younger engines of classes Y-5, Y-6, and Y-6a are considerably more



modern with their cast-steel bed frames, with roller bearings on engine trucks, drivers, and trailing truck journals, and with mechanical lubrication.

The two Y-3's working our train weigh 750,000 pounds with tender. Tenders have a capacity of 22,000 gallons of water and 26 tons of coal. Drivers are 58-inch; tractive effort is 136,985 pounds simple, 114,154 pounds compound. Boiler pressure is 270 pounds. High-pressure cylinders measure 25 x 32 inches; low-pressure cylinders are 39 x 32 inches. All the Y-class engines are equipped with Duplex stokers.

If you really want to get the feel of railroading, there's no better place to start than on board the caboose of one of these slogging coal trains. Sitting high in the cupola you can look back at the 2004 a few feet behind, its big blunt snout hunched hard up against that mile-long train of cars. At first the crashing of the exhaust is exhilarating, but soon the ear drums dull and the very monotony of it for mile after mile becomes soothing. Looking ahead, you get a good view of the long train winding around the hills. The curves along Tug Fork are sharp as well as frequent, but an occasional long tangent gives a fascinating perspective across the swaying piles of coal up to the far-away exhaust of the 2001 in the valley 132 cars ahead.

At close intervals an avalanche of wheels roars by on the westbound track. At first sight or sound of an approaching train, Flagman Hager swings down from the cupola and goes out on the rear platform to look the cars over as they stream by. With everything in good order he signals "all is well" as the westbound caboose flashes past. And when we lean out of the cupola window we can see the other brakie signal with a couple of flips of his hand that all's well with us.

The rear-end crewmen also watch out for and call the indications of the train order signals over each telegraph office just as the engineer and fireman are doing up on the lead engine. If the board is not in the "clear" position, a member of the crew gets down on the caboose steps to catch the hoop which the operator is holding.

A lot of westbound movement is coming down the hill this morning, and we meet train after train. From Williamson to Bluefield we're riding the Pocahontas Division — the hottest stretch of track on the system and the crucible in which all top-ranking Norfolk & Western railroaders must receive a period of training for their high posts. The majority of the mines served by the railway are located on this stretch, and during an average day the dispatcher at Bluefield will handle something like 130 trains ranging from through time-freights, coal drags and express passenger trains down to short-run "mine shifters." The distance from Williamson to Bluefield is 99.6 miles, and they are hard miles — mountain miles. In addition, approximately 275 miles of branch lines in this territory handle coal almost exclusively.

We blast our way through a constant succession of mining villages — Sprigg, Thacker, Delorme, Vulcan — all just a few miles apart. Mine tipples are crowded close to the tracks and we see shining black streams of coal tumbling into waiting gondolas. Occasionally we catch a glimpse of a squat electric motor coming out of a black portal in the hillside with a string of loaded mine cars on its way to the "headhouse," the place where the coal is dumped for processing and sorting into the various sizes before loading.

Just east of Vulcan we get an "approach medium" signal. From Vulcan to Devon — 5.2 miles — it's C. T. C. territory, and this indication means that we'll be switched over onto the westbound track or that we'll run into a yellow block at the next wayside signal. We reduce speed, getting ready for either possibility. It's the westbound track this time as the operator at Devon runs us around a "shifter" setting out empties at a mine tipple beside the eastbound main.

Devon is one of the assembly yards from which train operations are conducted to and from the mines. The heavy mainline traffic is swelled considerably at these assembly yard locations, and to provide the additional track capacity needed to keep the trains from bottlenecking, N&W uses C. T. C. for short stretches in their vicinity. Each C. T. C. machine is controlled locally by the operator at the assembly point.

At 7:21 we roll between columns of gondolas in the middle of Devon. Just past the station we see a string of empties starting down the 36-mile Buchanan Branch into the Thacker coal district. This field is noted for its production of high-volatile coals.

It's Lindsey at 7:30. Thirteen minutes later we're approaching Glen Alum. We have orders to head in here for No. 10, the early-morning Williamson-Bluefield local. We grind down to a walk as the lead engine nears the switch into the passing track. Now comes a ticklish bit of railroading. The problem is to head the heavy train into the siding without stopping, for 132 cars make an unwieldy string to juggle on a mountain grade just ahead of a passenger train.

As he nears the switch, the lead engineer eases off on his throttle and uses the independent brake to control the speed of the train. Now the entire 10,000 tons is on the pusher, which must keep working to shove the load along — slowly enough for the brakeman to run ahead of the lead engine and open the switch and yet not slow enough to stall. When the switch is opened, the lead engine goes to work again and we head smoothly into the siding. As the tail end goes into the clear, the flagman drops off to line the rails for No. 10.

While we're waiting, Flagman Hager brews some coffee. Coffee is an institution aboard all cabooses, and a pot of it is nearly always simmering on top of the stove. As we sit there with a mug of this thick black liquid, we appreciate the tradition that caboose coffee must be strong enough to float a track spike. It's a chilly morning, though, and we indulge in three cups.

The passenger train hustles through on the dot of 8:13 behind a sleek K-2 class Mountain type with torpedo streamlining. When the signal goes to yellow block a few moments later, the head end whistles off and the two big engines start us out onto the main line once more.

At 9:05 we stop at Hull for water and train inspection. Again, as he nears the water column, the lead engineer eases off and controls the train with his independent brake. About 100 yards from the column he applies the air through-

Coal for the N&W is hauled out of the mines behind electric locomotives which take their power from a low-hanging trolley wire. The fire hazard in a coal mine is great; workmen are forbidden to carry matches into this one.

A westbound train of coal winds along Tug Fork of the Big Sandy River west of Williamson, W. Va., on its way to the classification yards at Portsmouth, O. Portsmouth Yard, with a capacity of 10,300 cars, is largest on the N&W.

out the train and then cuts off and runs ahead to spot the tender under the spout.

While the lead engine is drinking, Conductor Lusk and Flagman Hager start up each side of the train and Brakeman Parsley comes down the right side toward the caboose. As they walk along, each man looks over the cars for anything which might cause delays. When Parsley meets Hager, who is also on the right side, he crosses over and goes back up the train inspecting the left side. Hager and Lusk return to the caboose.

Meanwhile the lead engine has returned to the train and the brake-line pressure has been recharged to 80 pounds as indicated by the caboose gauge. When the conductor and flagman reach the caboose, the rear engineer whistles off with two sharp blasts to inform the lead engineer that we are ready to pull ahead for the pusher to take water. We shove slowly ahead and, as our rear nears the water column, the pusher lets go and we wait on the grade while he gets his drink.

From Hull to Iager, 4.1 miles, it's C. T. C. territory again. Iager is a very busy assembly point. It is fed by the Dry Fork branch, which goes south for 45 miles to Cedar Bluff, Va. There connections are made with the important Clinch Valley line extending 103 miles southwest from Bluefield to Norton, Va.

At Iager we enter the 52.5-mile electrified zone which extends all the way east over the summit of the Appalachians to the divisional terminal at Bluefield, W. Va. In addition, 17 miles of branch line is electrified into the coal fields. Because of the heavy mountain grades on these branches to the mines, tonnage trains are handled by electric locomotives. These have proved especially efficient; their use eliminates the double-heading required when steam power is employed.

The first electrics were put in operation on the Norfolk & Western in 1914 to lick the tough climb over Elkhorn Mountain. This initial installation extended from Bluefield to Farm, 36.18 miles, but in 1916, when the eastbound coal movement skyrocketed due to the demands of World War I, electrification was brought on down to Iager, another 16.23 miles. Today, however, electric operation of tonnage trains doesn't begin until they reach Eckman, 28 miles farther east. The extension was made to Iager in 1916 because at that time steam power was not sufficiently developed to efficiently handle the increased tonnage up the grades, which begin to steepen a bit east of here.

Just east of Iager the engineer on the pusher eases off as he notes a brake application from the lead engine on his air gauge. We've got a yellow block. Moments later the brakes go on throughout the train and we stop with a red eye staring us in the face. It's 9:40 when we get started again on a yellow block, and the conductor writes up a 10-minute delay caused by a "shifter" with a string of empties getting out onto the main line just ahead of us to follow No. 10. For 13 interminable minutes we crawl up the grade to Wilmore behind the mine-run crew. Here they get out of our way and head down the Clear Fork Branch toward Coalwood to work the mines.

Now the real battle against the Appalachian grades begins. Steam's objective is Eckman, 24 miles east, and to reach it we've got to slog our way up a series of grades ranging from 0.85 to 1.1 per cent, all compensated for curvature. At Eckman electric power will be waiting to take the train over Elkhorn Mountain, where the grade has a maximum of 2.4 per cent.

The big Mallets are working at full capacity again now—full throttle and about 75 per cent cutoff. Today it is drizzling rain, and the drivers fight for traction on sanded rails. On these heavy coal trains it is particularly important to keep the engines from slipping, as spinning drivers break the steady drag and cause the slack to bunch up. Then when the locomotive takes hold again, the resulting jerk plays havoc with draft gear. To increase efficiency, the N&W has equipped all its freight power with rail washers. These clear the sand from the rails as the locomotive passes and eliminate the sand's resistance to the train.

Steadily the rails climb high into a world of forest-clad ridges and narrow winding valleys. We bore into tunnel after tunnel, ranging from a few hundred feet to half a mile in length. The low ceilings blast the pusher's thunder

down around our ears and the tumult is deafening. There are 19 tunnels on the main line of the Pocahontas Division, and 15 of them straddle our path in the 24 miles between Wilmore and Eckman.

We roll through the center of one coal mining village after another — Roderfield, Twin Branch, Claren, Davy — all with their small homes and businesses backed right up against the tracks or perched perilously on the mountainside a few feet above us.

At 10:50 we come into Farm. The pusher lets go and returns to Williamson for another load. The road engine lugs the first 45 cars of our train into the yard to reduce the tonnage to 6000 for the stiffer climb ahead, and another pusher — the 2062 — steals up behind the caboose and takes hold for the remaining 12-mile shove up to Eckman. While this is going on, our crew makes another inspection. This time Flagman Hager continues on up to the head end to give the cars a running scrutiny as the train gets under way. He watches for brakes that may not have released and for dragging rigging, then catches the caboose as it rolls by.

It's 11:17 before the 2001 is back on the train and the air test completed. Then we go slamming at another lifting grade, 0.6 per cent this time, for 2 miles up to Welch.

We run in C. T. C. territory for 1.6 miles up to Tug Tower, just west of Welch. At the tower we're switched off the main line onto a loop track which by-passes the town. Welch is the largest center between Williamson and Bluefield, and because of its many grade crossings all these long freights must be routed round the loop. Welch is also the entry point into the famous Tug River coal district, noted for its vast stores of low-volatile coals. Millions of tons are mined annually for domestic use. These coals are also standard for marine use and hold high rank as steam producers.

Back on the main line again, we bore into a tunnel and out across the steel span crossing Tug Fork. We have followed this branch of the Big Sandy River all the way up from Williamson, and now we join the tumbling waters of Elkhorn Creek for the 12 miles up to North Fork.

Huger comes next, at the begining of 6.7 miles of 1.1 per cent grade right into Eckman yard. We top a short stretch of 0.85 per cent just west of the depot and come onto the level at 20 m. p. h. Around the curve lies Steam's last lift. We give it everything we've got. Down drops our speed, to finally hold at about 12 m. p. h.

The punishing pull takes nearly 30 minutes. Finally, at 12 o'clock straight up, we're on the summit and passing the Eckman yard board. Five minutes later we stop between long lines of gondolas. That's all for Steam until we start downhill toward Roanoke over the Radford Division. The 75-mile run up from Williamson has been covered in 5 hours 42 minutes, including all stops. This makes an average running time of 13.5 miles an hour — a nice bit of mountain railroading with 10,430 tons.

Eckman yard is a beehive of activity. Long trains of merchandise and coal are being inspected; others are testing brakes for the westward slide down to Williamson. Electric and steam helpers come light down the mountain and into the yard to pick up more trains for the heavy eastbound grade.

A pair of big class L-C-1 electrics comes up the yard, bound for the head end of our train. The lead engine is No. 2502, and we climb aboard to watch its performance over Elkhorn Mountain for the remaining 24.4 miles into Bluefield.

The L-C-1's have a look of competence. Like the Y-3 Mallets, they are old hands at the job of moving coal. Twelve of this class were built in 1914 for the initial electrification between Bluefield and Farm. They whipped the Elkhorn grade so successfully that the railway supplemented them in 1924 with four additional engines, class L-C-2, with slightly greater weight and tractive power.

These locomotives are made up of two coupled units, each of which houses four motors in the L-C-2 class and two motors in the L-C-1's. The motors are three-phase constant speed induction types, and are wound for working at 14 and 28 miles an hour. At the time they were designed it was necessary to use a three-phase motor to get sufficient torque for starting heavy trains. Since then, however, engineers have found that they can get the necessary torque with a single-phase motor.

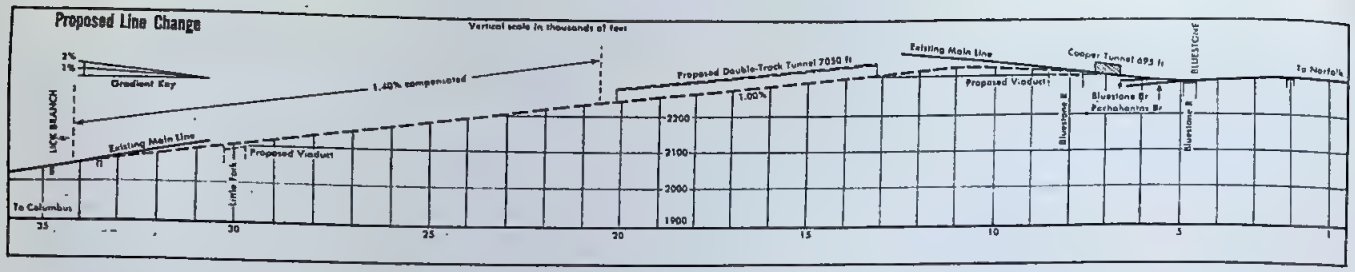
The L-C-1's weigh 600,000 pounds and exert 66,000 pounds continuous tractive effort at 14 miles an hour. At 28 miles an hour their tractive power is rated at 59 per cent of this figure. At the time they were placed in operation they were the heaviest and most powerful electrics in the country. The L-C-2's weigh 832,000 pounds and exert about 30 per cent greater tractive power. Both classes have eight 63-inch drivers per unit, coupled by side rods in groups of two per truck. Operation is by alternating current coming into the trolley at 11,000 volts. This is reduced to 1100 volts by transformers before reaching the motors.

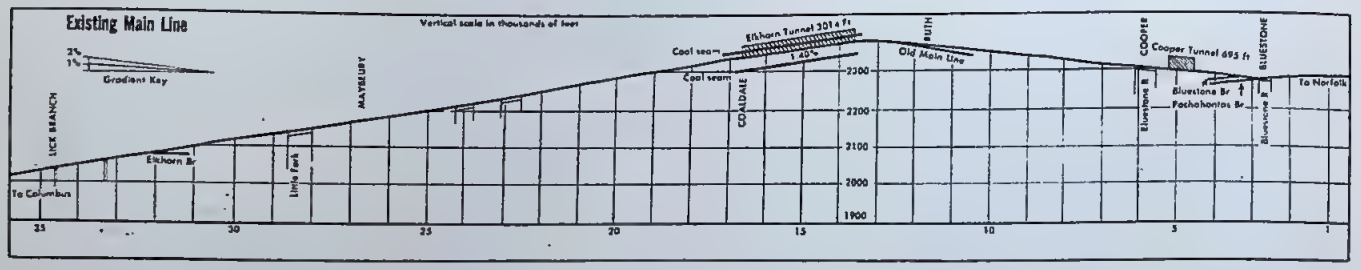
Now the time is 12:43. Brakes have been tested and we're waiting for the operator in the Eckman depot to give us the board for the main line. In a few moments the position-light signal target winks to "clear," and Engineer Davison yanks two long blasts out of his air-horn. At once the 2501 on the rear end acknowledges and simultaneously the engineers on the three big electrics — two front, one rear — put their speed levers into the 14-miles-an-hour notch for the heavy climb ahead, and pull their acceleration handles out to maximum.

As the power surges into the motors we move out onto the main line with a speed and smoothness that leaves us gasping. We've got 5000 tons now, and in exactly one minute the three electrics have got the load up to maximum speed. Then the needle on the ammeter dial automatically drops from 900 to 500 amps and we're humming our way up the 2.3-mile stretch of 1.1 per cent grade to North Fork. The enginemen are allowed a maximum of 900 amps and a period of five minutes to accelerate the train up to maximum speed of either 14 or 28 miles an hour. For this length of time, the maximum accelerating effort of the L-C-1's is rated at 125,000 pounds at 14 miles an hour and 90,000 pounds at 28 miles an hour. If not up to maximum speed in five minutes, they must stop and cool off their motors before going at it again.

At North Fork the altitude is 1706 feet and we've climbed 111 feet from Eckman. Now the grade stiffens a bit — 1.8 per cent to Ennis and a climb of 300 feet in 4.6 miles. At Powhatan we leave the 4-

Trains follow huge Mallets→ and double-headed two-cab electric locomotives up the mountain grades. First engine↓ is a class L-C-2; second is an L-C-1. The grade is 2.3 per cent up Elkhorn Mountain, between Maybeury and Coaldale, W. Va. This line is now being relocated.





mile stretch of C. T. C. that has extended east from Eckman. On this section we meet several electrics hurrying light down to Eckman to pick up the four "double" (two-engined) coal drags which are following us up from Williamson.

When we whine round the curve through Ennis, we're looking right smack at the face of Elkhorn Mountain. The next 4 miles up to Coaldale are the toughest climb on the entire main line. The grade is 2.0 per cent, compensated for curvature, and the rails snake around the sides of precipitous cliffs all the way. We'll climb from 2000 feet at Ennis to almost 2500 feet at the west portal of Elkhorn Tunnel.

Up and up we drone, right to the high rims of the Appalachians. Sharp curves, high bridges, tunnels. It takes a bit more current to pull the heavy train up the 2.0 per cent grade, and the ammeter needle creeps up from 550 amps to a maximum of 650. The voltmeter, however, continues to read 1100. And because these engines operate on alternating current, the voltage remains the same no matter how many other trains are climbing behind us. The speedometer holds right up to 14 miles an hour. These electrics are silent and efficient, but climbing a hill with them is mighty tame. You miss the crashing thunder of exhaust, the pulse of steam. In its place comes only the deep whine of the traction motors and the steady hum of the cooling fans in the motor compartment.

As we pass Lick Branch station we see the spot where an improved grade, now under construction, will head off for 5.27 miles over an easier route to join the present main line again at Cooper. Eastbound, the grade will be at a maximum of 1.4 per cent compensated, and westbound the present 1.1 per cent climb will be practically eliminated except for a short stretch between Cooper Tunnel and Bluestone. The whole project will cost about $12 million and will include construction of a new double-track tunnel, 7050 feet long, to eliminate the present single-track Elkhorn Tunnel which has been in use since the line was first opened, plus the construction of two new steel bridges and the rebuilding of a third. The new line will be controlled by C. T. C. Operating efficiency will not only be increased, but safety will be improved, and the railroad will be able to handle considerably more traffic.

We're 105 feet above stream when we roll over the three steel viaducts at Maybeury. Coaldale comes next. Here the grade reduces to 1.4 per cent and the 2501 lets go of the rear to return to Eckman for another load. Before cutting off, the pusher eases up gradually to avoid a run-out of slack and stops immediately with a hard brake application upon separation from the caboose.

Now we're looking at a black hole in the mountainside: Elkhorn Tunnel, 3100 feet long. It's good to be riding an electric engine as we drone through the backbone of the Appalachians, for there's no suffocating smoke and steam. From the east portal at Ruth it is downgrade at 1.4 per cent for 2 miles to Bluestone. On the roll downhill our speed stays right on 14 miles an hour, and Engineer Davison does not have to use the air because the resistance of the motors acts as a brake.

For 7.5 miles between Bluestone and Bluefield, Va., we go uphill again, but we're going to take advantage of the Bluestone River water grade. Just west of Bluestone station, Davison shuts off his motors. The amperage reading drops to zero and he puts the speed lever into the 28-mile-an-hour notch. Then he puts the acceleration handle back to maximum again and we pick up speed. This speed-changing operation is just like changing gears in an automobile.

In exactly 1½ minutes we're swinging along the river at top speed, and it seems mighty fast after the 14 we did up the mountain. As we go through Bluestone we see the railway's huge steam-powered generating plant which supplies power to the electrified section. Close by are extensive shops for servicing and repairing the electric locomotives. At Flat Top the state boundary marker slips by and we run in Virginia for 6 miles.

We sweep through Falls Mills just as No. 99 comes smoking up the westbound track with 70 cars of merchandise. This is one of the crack time-freights which give third-morning delivery in Chicago or Detroit after midnight departure from Norfolk. They're plenty hot and are really given the railroad.

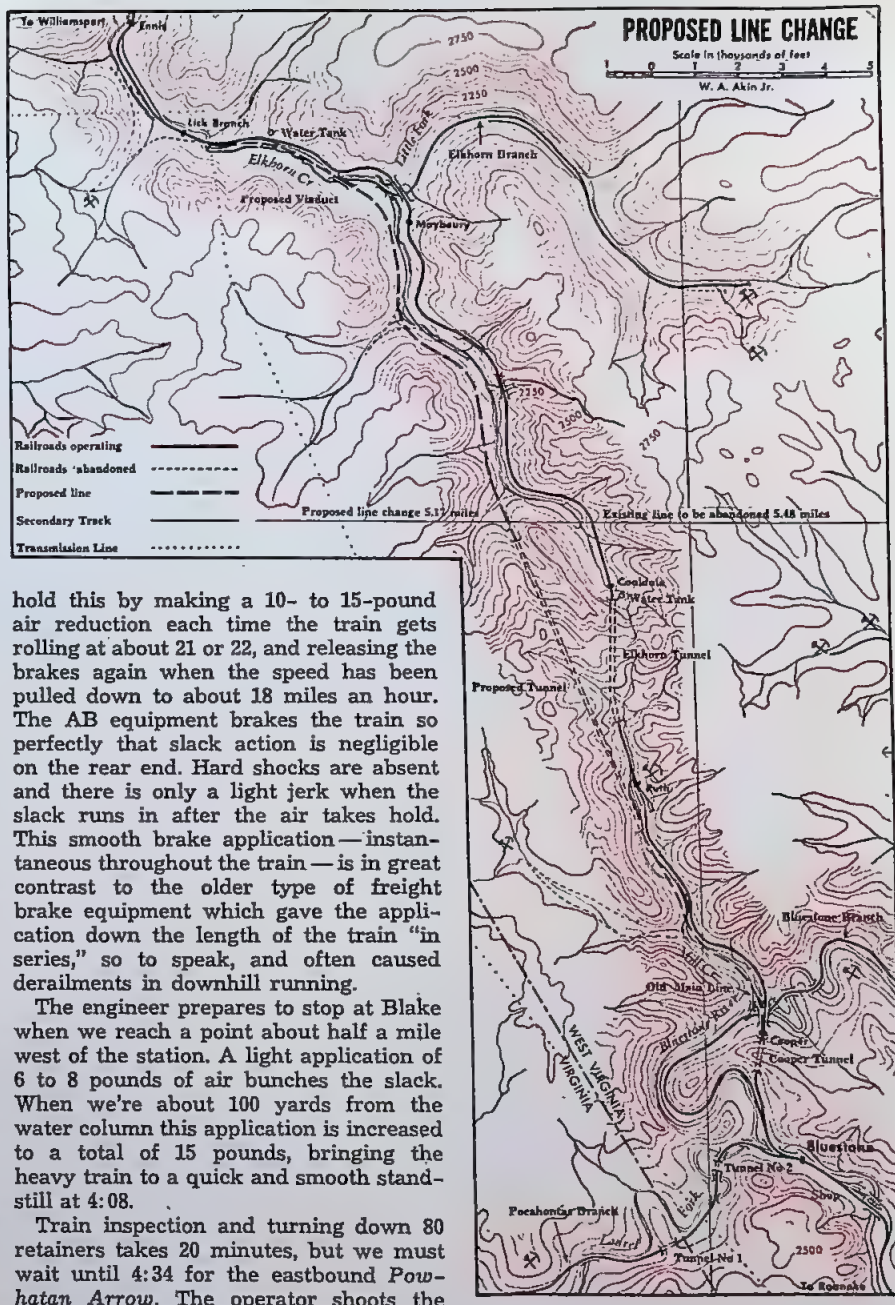
Approaching HQ Tower just west of Bluefield, Va., Engineer Davison shuts off his motors to let the speed decrease to 14 miles an hour. Now we need power again instead of speed, for Bluefield Hill is just ahead — a snappy 3-mile climb at 1.22 per cent extending right into the divisional yard at Bluefield, W. Va. Davison glues his eyes to the speedometer. When the needle hits 14 miles an hour, he flips the speed lever into that notch and immediately pulls the acceleration handle out to maximum to hold his momentum. As we go by the tower, Davison sticks out his hand to receive the order which the operator is holding in a hoop. The message instructs him to return to this point with the 2502 after depositing our train in the terminal yard, and go down the 12-mile Pocahontas Branch for a string of loads. Two trips into the coal fields from Bluefield constitute a day's work for these crews. They work on a turnaround instead of a mileage basis.

Half way up the hill we're back in West Virginia again, and at 2 o'clock on the dot we're snaking onto No. 3 track in the receiving yard at Bluefield. The caboose is detached from the rear and runs by gravity about 300 yards to the "cab track," where cabooses are lined up awaiting duty.

We continue to climb until we get opposite the passenger depot. Bluefield yard is operated by gravity and extends 1 mile on either side of a hump opposite the station. This is the highest point on the Norfolk & Western main line — 2567 feet above sea level.

When about half the train has rolled over the summit, Davison gradually eases off the power and we reduce speed. By the time the biggest portion is over the crest, we're getting close to the delivery track lead. Davison makes an initial application of 10 to 15 pounds of air to check our speed down to 8 miles an hour. When the brake valve quits blowing, he

Work is now under way on the line relocation between Lick Branch and Cooper. The new line will not be materially shorter than the old (5.17 miles as compared with 5.48 miles), but will be much straighter and less steep. The maximum grade eastbound will be 1.4 per cent compensated; it is now 2 per cent. The westbound grade of 1.2 per cent will be practically eliminated except for a short stretch between Cooper Tunnel and Bluestone. Curvature will be reduced from a maximum of 13.06 degrees to a maximum of 4 degrees 30 minutes. The new tunnel will be more than twice as long as the old, 7050 feet as against 3014 feet, and will be double-track. When the original tunnel was built, it followed a seam of Pocahontas coal through Flat Top Mountain. The contractor was given the coal taken from the bore, and he sold it for enough to pay all labor costs. Profiles indicate how nearly 100 feet of climb will be eliminated by the new line. Besides the many freight trains, 14 daily passenger trains will use the new line.



makes an additional application of 8 pounds, bringing the heavy train to a smooth stop clear of the head-in switch.

The electrics are cut off and a squad of car inspectors descends upon the train. Iron grapplers open each journal box, and the cars are looked over to make sure that everything is in good order. When inspection is completed, a hump engine takes hold and classification begins. Foreign cars, off-line cars, and loads destined for points between Bluefield and Roanoke are weighed here on a track scale. It takes about 16 seconds to weigh each load; the scale is just long enough to hold a car for this length of time while it is rolling at about 3 miles an hour.

A new train is made up — 120 cars, 10,000 tons. Train and engine crews have been called for 3 o'clock, to leave at 3:45. A class Y-5 Mallet, No. 2101, trundles over from the roundhouse lead and backs on. We'll follow this engine 20 miles down the east slope of Allegheny Mountain from Elliston into Roanoke.

On board the caboose we find Conductor Jimmy Sink going over the train orders with Flagman O. B. Irvin. This is an all-steel caboose with cushioned underframe, the conductor reveals. When the slack is running in or out, the flexible underframe takes the jerk while the body "floats" above.

At 3:48 we roll out of Bluefield. The conductor checks the air gauge above his head — 80 pounds on the dial — and records the pressure in his train book. We are riding the Radford Division now, 100 miles to Roanoke, and we'll have an interesting variety of 55 miles downgrade, 38 miles of river running, and 7 miles of mountain climbing.

Leaving Bluefield, the line descends sharply at 1.6 per cent for 8.8 miles to Blake. We've got 75 per cent of our retainers turned up for this stretch and we will stop at Blake to turn down all but 10 for the remaining 12-mile descent to the New River grade at Glen Lyn.

At Ada the brake shoes are really curling blue smoke; we've dropped 330 feet in 4 miles since leaving Bluefield. The speed limit down the mountain is 20 miles per hour. The engineer is able to hold this by making a 10- to 15-pound air reduction each time the train gets rolling at about 21 or 22, and releasing the brakes again when the speed has been pulled down to about 18 miles an hour. The AB equipment brakes the train so perfectly that slack action is negligible on the rear end. Hard shocks are absent and there is only a light jerk when the slack runs in after the air takes hold. This smooth brake application — instantaneous throughout the train — is in great contrast to the older type of freight brake equipment which gave the application down the length of the train "in series," so to speak, and often caused derailments in downhill running.

The engineer prepares to stop at Blake when we reach a point about half a mile west of the station. A light application of 6 to 8 pounds of air bunches the slack. When we're about 100 yards from the water column this application is increased to a total of 15 pounds, bringing the heavy train to a quick and smooth standstill at 4:08.

Train inspection and turning down 80 retainers takes 20 minutes, but we must wait until 4:34 for the eastbound *Powhatan Arrow*. The operator shoots the eight-car streamliner around us on the middle track and the position-light target goes to yellow for us to get going again.

East from Blake the line drops down to the river on a series of grades ranging from 1.19 per cent to level. We continue to hold 20 miles an hour for 7 miles down to Oakvale, where the curves straighten and the topography flattens out considerably, and then we pick up to 25 for the last 5 miles down to Glen Lyn.

When we break out of the hills onto the river, the engineer cuts down to 10 miles an hour so the brakeman can get out onto the swaying cars and turn down the remaining 10 retainers. At Glen Lyn we've dropped 1024 feet from the summit of the Appalachians and now it's an easy-going but upward water grade for 38 miles to Walton. We rise at 0.32 per cent to the foot of Allegheny Mountain.

At 5:19 we are passing Lurich and the slack tightens. Looking up the river on a long curve we see the 2101's stack start to blast high into the sky. Retainers are down and now the engineer is going to whip the big Mallet up to 35 miles an hour, the top speed he'll be able to make up the river. It's a punishing pull with 10,000 tons, and the continual curves add considerable resistance to the 120-car train. The 2101 consumes 7 miles and 20 minutes to get up maximum speed.

In the beautiful valley of the New River we twist our way toward Walton, through grazing and lumbering country, past river meadows and truck gardens and orchards. The Norfolk & Western is a railroad of matchless scenic beauty.

Towns slip past. Pearisburg at 5:40, Ripplemead at 5:58, Pembroke at 6:03. Across the river opposite Eggleston we see a Virginian Railway time-freight droning westward behind a big three-unit electric locomotive.

There is a 10-minute stop at Dry Branch for water and train inspection. We're away again at 6:35, and at Cowan, 25 minutes later, we're blasting through

A big class Y-6 Mallet ↑ comes down Allegheny Mountain with a 10,000-ton train of eastbound coal. Soon it will roll through the weighing and classification yards↙ at Roanoke. Cars are weighed as they roll over the hump and through the retarders to the classification tracks.

Pepper Tunnel, where the rails are welded into three 1100-foot sections to make track maintenance easier for the section crews. From the east portal we cross the New River, follow the north bank for 5 miles to Walton, and stop at the foot of Allegheny Mountain with our watches reading 7:16.

We do some fast work here. A perishables extra is behind us and we don't want to delay him. Retainers on all 120 cars are set up for the swift drop down the east slope, and Engine 2141 — class Y-6 — couples hold of the rear to shove us to the summit. This takes 12 minutes. When Flagman Irvin returns to the caboose at 7:28, a couple of shrill blasts crack from the pusher's whistle and the two big Mallets slam at the mountain.

The rails climb out of the New River Valley over the crest of Allegheny Hill, and drop into scenic Roanoke Valley. It's 7 miles to the summit at Christiansburg and the grade is 1 per cent, starting about 1½ miles east of Walton.

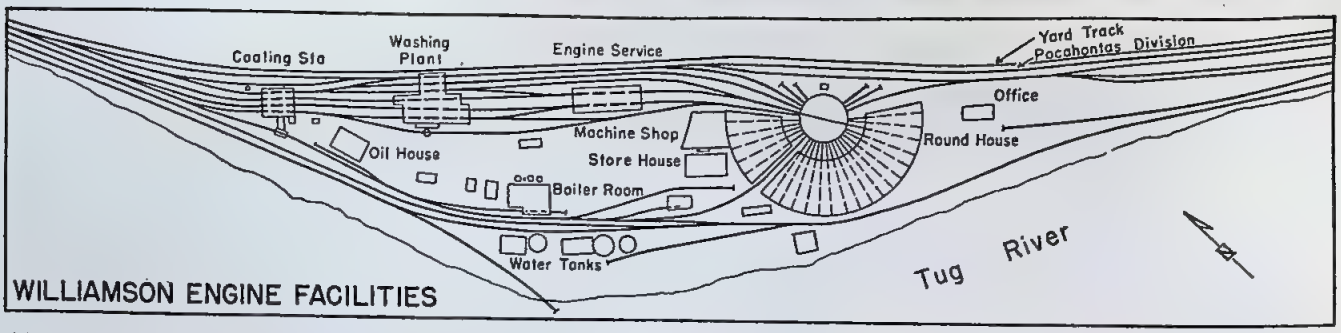
We really storm over the summit at Christiansburg, making 20 miles an hour with 10,000 tons. The time is 8:10. As the pusher cuts off on the fly, the conductor checks the air pressure on the caboose gauge and we start cautiously down the mountain. We've climbed 285 feet from Walton and now we'll drop 760 feet down the 12.5-mile 1.3 per cent grade to Elliston. Orders hold us down to 20 miles an hour. We pass Shawsville in the valley, 1478 feet above sea level, at 8:37, and 10 minutes later we pull to a stop at Elliston to turn down all but the 10 head retainers for the remaining 20 miles of undulating grade to Roanoke.

As we walk toward the head end to board the 2101, we see flickering lights as car inspectors probe trucks and air-hose connections. The railway keeps a gang on duty here 24 hours a day to speed the inspection of all eastbound freights while their crews attend to the retainers.

We find Engineer L. E. White and Fireman E. W. Williams at the controls. This Y-5 is heavier and a bit more powerful than the Y-3's which worked us over the Pocahontas Division. The 19 engines of this class were built in 1930-31 at the Roanoke Shops, and they measure 113 feet 11¼ inches from coupler to coupler. They weigh 582,900 pounds with tender; tractive effort is 152,206 pounds simple and 126,838 pounds compound. Driving wheel and cylinder dimensions are the same as the Y-3 class but the boiler pressure has been stepped up from 270 pounds to 300.

At 9:08 the retainers are down and train inspection is completed. On a signal from the head carman the operator in the depot gives us the board and Engineer White begins to ease the heavy train off the mountain. Great care must now be exercised in releasing the long train to the grade. Because wheels are still hot after the continuous downhill braking, some of the shoes may be sticking; and if the head end gets away too fast the engine is liable to pull a drawbar.

We drop right down into a sharp sag. Then the engineer heaves the throttle back to half-way on the quadrant, sets



WILLIAMSON ENGINE FACILITIES

his cutoff for about 60 per cent, and the big Mallet takes the train up the other side at 30 m. p. h. It requires real artistry to pilot these long coal drags over the undulating grades from Elliston into Roanoke. In short "dippy" territory such as this the train must be handled like a string which, if yanked suddenly, will break in two. The problem is to control the head end until the rear of the train is pulled to the top of each hill. This leaves no weight hanging over the crest to snap the train when the locomotive lunges into the next dip.

Approaching the crest, the engineer shortens his cutoff and gradually closes the throttle. When we tip over the summit, he releases sand to the rails and brakes the locomotive until he is reasonably sure that the tail end has reached the top of the hill.

This operation is repeated time after time all the way to Roanoke and requires sharp teamwork on the part of the engine crew. In addition to checking the block signal indications, the man on the left side watches the engineer and the water-glass, and gives close attention to the operation of his stoker. Every time the engineer makes an adjustment of throttle or reverse lever, the fireman must instantly counter with an adjustment of his firing valve to compensate for the demands of the engine.

Our maximum speed over this undulating territory is 40 miles an hour. We're going all of this by the time we reach Salem, 2½ miles west of Roanoke, and the engineer makes an 8- to 10-pound air reduction to pull the train down to 20 miles an hour for the approach to the west end of the great classification yard. About ¼ mile west of the entrance we get a hand signal from the towerman indicating that the route is lined for No. 6 track in the eastbound receiving yard. It's "clear" on the automatic signal routing us off the main line onto the yard lead, and 300 feet west of the head-in switch another 8-pound air reduction pulls us down to 10 miles an hour. Going down the lead, the engineer controls the train with his independent valve, finally adding a 10- pound reduction with the automatic brake to bring us to a stop clear of the delivery track switch at 9:48.

The 2101 lumbers off to the roundhouse. Waybills are dispatched to the hump office and, after the carmen have finished their inspection, a hump engine couples onto the train and classification begins. One by one the loads roll over the scales to be weighed and billed. New trains are built up, wheel reports are made out and picked up by conductors, and in a few hours the coal from our train is moving north, south, and east — up the Shenandoah Valley toward northern industries, into the southeastern states via North Carolina, and on to Norfolk.

Traffic on a coal-hauling road is bound to be unbalanced. Here a 120-car train of empty hopper cars passes Extra 2167 East on neatly ballasted roadbed at Blake, Va. The empties are bound for the Pocahontas mining region of Virginia, West Virginia, and eastern Kentucky.

Emma disrupts the L&N

ALL PHOTOS COURTESY LOUISVILLE & NASHVILLE RAILROAD.

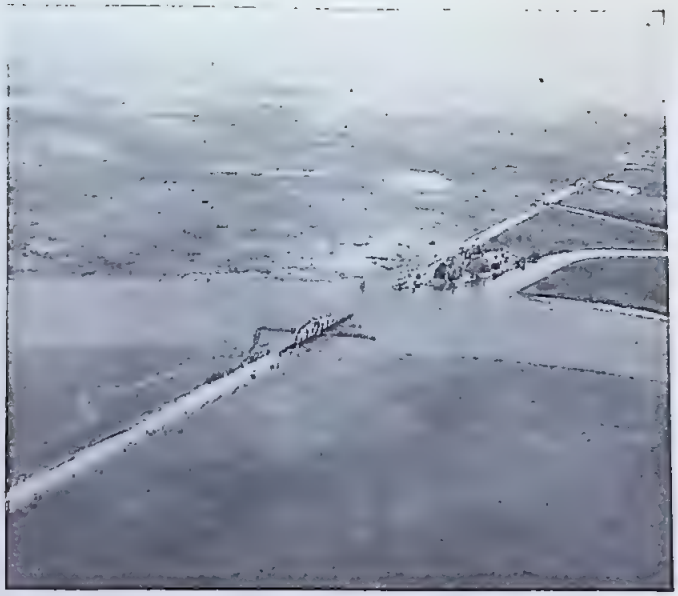
When Emma visited the Mississippi Gulf Coast on September 19, she left in her wake a trail of destruction that included $3 million damage to the properties of the Louisville & Nashville's M&NO Division. The bridge across Biloxi Bay was hard hit as wind-washed waves swept away about 80 per cent of the deck trestle. Much of the rail on the bridge was lost, and more was twisted so badly it could not be reused.

"Emma" is the name given by army weathermen and American Red Cross workers to the hurricane which struck southern Florida September 17, then moved to the Gulf Coast area and on to New Orleans. Torrential rains accompanied the hurricane, and waves from the Gulf added to the destruction. The winds sometimes reached a velocity of 150 miles an hour.

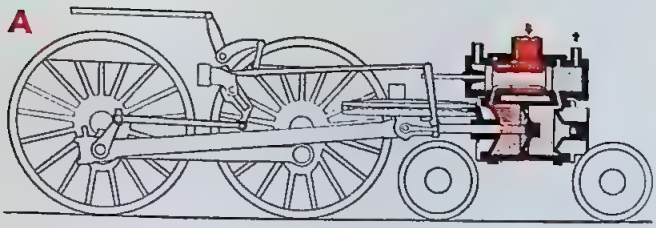
Damage on the L&N extended all the way from Ocean Springs, Miss., to New Orleans, 84 miles. Much of the trackage closely parallels the shore line, and water frequently joined with the wind in the destruction. The section hardest hit was between the Pearl River bridge and a point south of Higgins, La., 28 miles. Muck, marsh grass and assorted debris covered the roadbed to a depth of several feet. Telephone and telegraph facilities, and signals, too, suffered heavily in the Waveland-Higgins area. Bridges and trestles in this area were not harmed.

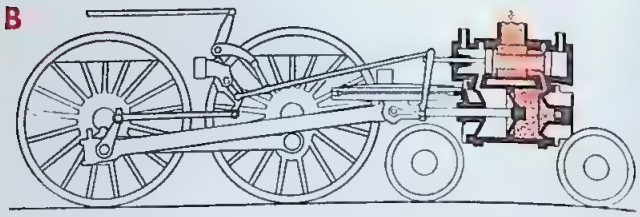
Resumption of service on the M&NO Division is expected about November 1. In the meantime, track forces are working around the clock and bridge forces are working a 12-hour day. The *Crescent* is operating in and out of New Orleans by way of Meridian, Birmingham and Atlanta over Southern rails. The *Piedmont Limited* runs only as far as Ocean Springs. The *Humming Bird* stops at Montgomery, and the *Azalean* and *Pan-American* turn at Mobile. Local trains run between Mobile and Ocean Springs.

The hurricane struck L&N's bridge across Biloxi Bay with such force that sections of track were draped alongside the pile supports like a roller coaster↙. About 80 per cent of the trestle deck was swept away← by huge wind-driven waves. Rails that were not lost on the bottom of the bay were so badly twisted that most were unusable. Only the draw span escaped serious injury. The top photo← was taken from the Ocean Springs side of the bay, looking toward Biloxi. This is the easternmost limit of the 84-mile area swept by the storm. The Louisville & Nashville's main line from Cincinnati to New Orleans is single track most of the way, with double-track sections from Anchorage to Elizabethtown, Ky., Amqui to Brentwood, Tenn., and Athens to Calera, Ala. Other smaller sections of double track are used where traffic warrants it. This particular section sees little opposing traffic because it is near the end of the line. Think of the damage had it been double track!



Nearly half of the 897-foot-long Pearl River bridge↑ was washed away by waves. As with the Biloxi Bay bridge, the draw span suffered little damage. The Pearl River is the boundary between Louisiana (foreground) and Mississippi. Several hundred yards of track was moved↗ off the right of way near Ansley, Miss. Braced telegraph poles remained standing while others were bowled over. House→ on right of way originally stood ¼ mile away, near Lakeshore, Miss. Passing track in foreground was lifted bodily over the other track and stacked fencewise. Signal↘ and communications facilities were badly damaged in the Lakeshore area. L&N employees were on the scene of the disaster as soon as the hurricane subsided, and rehabilitation work started immediately. Some areas were so isolated that they could be reached only by boat more than two weeks later, and this hampered reconstruction considerably. This hurricane was worse that the one of 1915, which disrupted service for 28 days.





driver rocks the reverse link. The timing is such that the link reaches its extreme positions when the main piston is at the center of its stroke.

b. The rear end of the radius rod slides in a curved slot in the link, and the engineer can raise and lower the back end of the radius rod by operating the reverse lever in his cab. He lowers the rod to go forward. The more he lowers it, the later will the cutoff (Operation 2) occur. To back up, he raises the rod. The cutoff can be adjusted at any time whether the engine is running or not. A late cutoff gives power for starting or climbing; an early cutoff saves fuel.

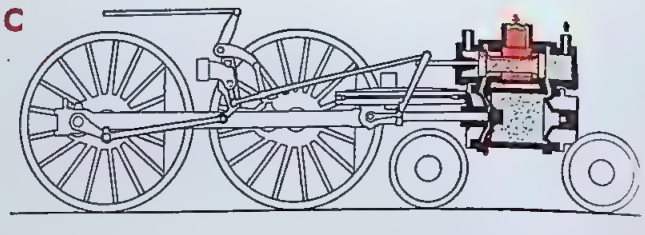
c. The motion of the radius rod is combined with a third motion taken from the crosshead via the crosshead link. This tends to make the valve lead the drivers at the end of a stroke of the piston. That is why steam can be admitted before dead center is reached in Operation 1. The amount of "lead" can be adjusted at the shops by changing the length of the combination lever to lengthen or shorten the stroke.

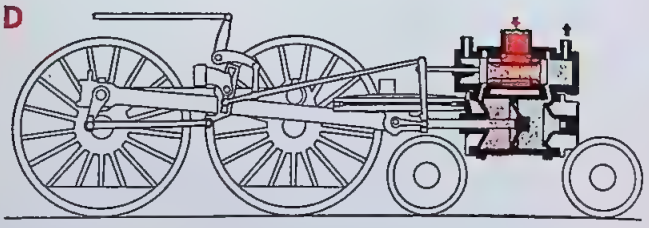
The length of time the ports are closed for both the cutoff and compression periods is also controlled by the amount the valve piston ends overlap these ports. Locomotive mechanics call this "lap."

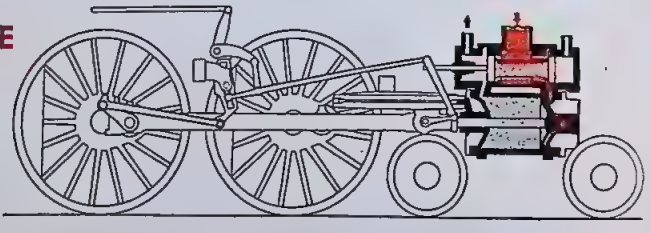
The animated drawings show: *A*, a valve gear with radius rod lifted for reverse motion. Red is hot steam; gray is exhaust steam. *B* and *C*, forward motion with the radius rod fully down for maximum power. *D* to *H*, a complete cycle for forward motion with about 50 per cent cutoff.

Sometimes a cab is built on the front of a locomotive to house test equipment, as shown in the photo↓. Inside, a card follows the piston motion back and forth. A pencil actuated by a steam gauge marks the changes in cylinder pressure as the locomotive drivers turn. *K* shows a typical indicator diagram card with about 70 per cent cutoff. *L* shows about 30 per cent cutoff.

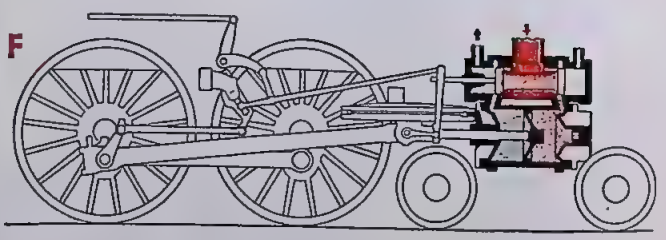
The engine in the photo is Baltimore & Ohio's 4-6-4 *Lord Baltimore*. The drawings are from plans of a Pennsylvania Railroad Atlantic locomotive.

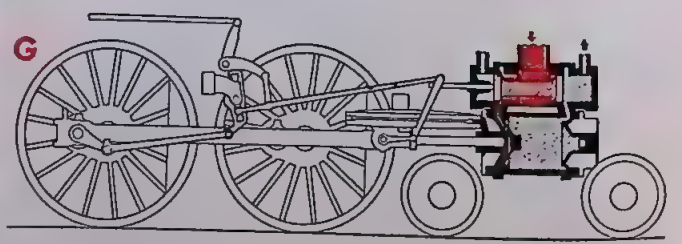


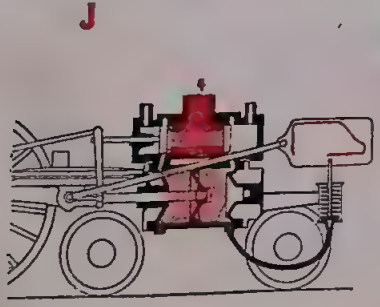


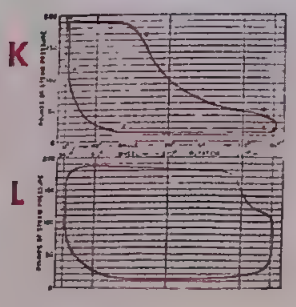


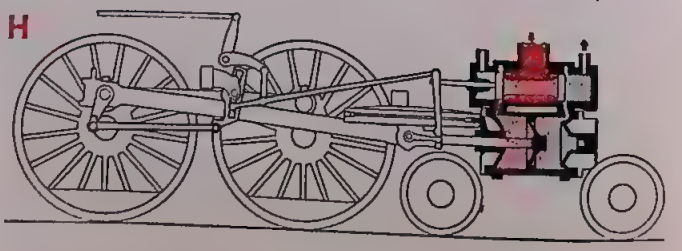
Railroad Photographic Club.











Wayne Brumbaugh.

Photo section

The Reading Philadelphia express is crossing the Raritan River bridge at Manville, N. J. This is on the pretty Reading-Jersey Central route between New York and the Quaker City. From Jersey City to Bound Brook, just east of where this picture was taken, the train used Jersey Central rails.

Richard J. Cooke.

Richard J. Cooke

Studies in Nickel

The New York, Chicago & St. Louis, better known as the Nickel Plate, has always been an orphan child. It was built in 1882 by a man who didn't really want it — Calvin S. Brice. He laid his track parallel to the New York Central between Buffalo and Chicago simply to create a nuisance which he could sell to the Vanderbilt road (in 1883) at more than cost. The NYC in turn sold the Nickel Plate in 1916 because control of competitive mileage was increasingly unpopular with the I. C. C. The new owners, the Van Sweringens, bought only because they wanted the Cleveland right of way for rapid transit; they kept it, however, until the bottom of the great depression. Latest owner was Robert Young's C&O, which is now distributing 192,400 shares of Nickel Plate common to its stockholders to rid itself of NKP control so it can go after control of New York Central instead. This action followed refusal of Nickel Plate preferred stockholders to go along with Young's plan for consolidating NKP, C&O and Pere Marquette.

The amazing thing is that in spite of these orphan-child ownerships Nickel Plate has been improved to a high standard of physical plant in recent years. Its 1687 miles of line include the Buffalo-Chicago main and the lines of the old Lake Erie & Western from Toledo and Sandusky down to Peoria and St. Louis. One of Nickel Plate's 70 modern Berkshire type locomotives↖ is shown at Bellevue, O. The Pacific↙ is arriving in Rocky River station. No. 901, at Delphos, O., is a well maintained Consolidation. Pacific 175↘ is at Knox, Ind., at the head end of the Chicago-bound Westerner.

John F. Horan.

Richard J. Cooke.

R. H. Kindig.

One of the Union Pacific's famous "Big Boys" tugs at the head end of a long eastbound freight in front of Sherman station↑. Note the train number just above the markers at the front of the engine. Both UP and SP use this system of identification. The "X" denotes an extra train.

Union Pacific 3993↓, one of the 105 Challenger type engines, starts down Sherman Hill with an eastbound fruit extra and a full head of steam.

Westbound freight crosses the giant fill at Dale Creek, Wyo. This man-made embankment is one of the achievements of the Harriman administration around the turn of the century. Approximately 475,000 cubic yards of dirt were dumped in this location to form the fill. There were eight steam shovels at work on the project, and the job took over half a year to complete. This was a remarkable performance.

SHERMAN HILL PARADE

When E. H. Harriman set out to rebuild the Union Pacific, one of his major relocation projects took place in the vicinity of Sherman, Wyo. Under Harriman's brilliant engineer, J. B. Berry, a new line was built through the Laramie Mountains 237 feet lower than the old route. The famous trestle across Dale Creek, some 650 feet long and 135 feet high on the original road, was replaced by a fill a few miles south of the old structure. Sherman Hill, elevation of 8013 feet, is the highest point on the Union Pacific system.

Sherman is named for W. T. Sherman, the great Civil War general. It is said from this point on a clear day one can see Pike's Peak about 165 miles to the south, and Elk Mountain approximately 100 miles to the west.

This grade is one of the favorite haunts of photographer R. H. Kindig who took these pictures last August. In his pictures some of the UP's most spectacular locomotives, including the "Big Boys" (4-8-8-4) and the powerful 4-12-2's, may be seen climbing the 1.55 per cent grade. Sherman is 32 miles west of Cheyenne on the main line of the Union Pacific. All of UP's through east and west traffic is funneled through this two-track line.

Steam and diesel power linked together pull the crack City of Portland↗ across the Laramie Mountains. The 4-8-4 is helping a two-unit diesel. Picture taken near Sherman, Wyo. Two Mallets double-head this westbound extra freight↘ on the up-grade coming into Sherman. The first engine is a 4-8-8-4; second a 4-6-6-4. Sherman Hill has a top grade of 1.55 per cent.

3614

Thomas O. Acree.

Denver & Rio Grande Western heavy articulated No. 3614, a 2-8-8-2, is pulling a freight train out of Grand Junction, Col., for Denver via the Moffat Tunnel route. Grand Junction is the meeting place of the old narrow-gauge Rio Grande line over Marshall Pass (which comes down the valley of the Gunnison) and the newer main line which comes down the valley of the Colorado, locally called Grand River. Here is one of the huge classification and servicing yards which dot the lines of the western transcontinentals and absorb much schedule time.

Photo by Ralph E. Hallock.

You've seen many a picture of Southern Railway trains emerging from the tunnel at Burnside, Ky., onto the high Cumberland River bridge. Here's the same scene with the usual viewpoint reversed, looking from the bluff near the tunnel out over the long bridge and approach trestle. New line relocation will eliminate tunnel.

Los Angeles Union Station can claim no record for total number of trains, but it does carry an extremely dense traffic at certain morning and evening hours because transcontinental trains tend to bunch at the times most preferred. Here Santa Fe's Chief, behind diesel, leaves at same time as SP's Sunset, steam-powered.

Thomas O. Acree.

Fred H. Ragsdale.

Chicago & North Western's train 13 from Omaha pulls into Chadron, Neb., at 1:20 p. m. Passengers for Casper, Wyo., then change to a motor train which leaves Chadron at 1:45. Five minutes later train 13 leaves Chadron and branches northward at Dakota Junction, 5 miles west of Chadron, to continue on to Rapid City, S. Dak. Engine 1588 is a class E Pacific (4-6-2), built by the Schenectady Locomotive Works about the time of World War I. The original class E (Nos. 1500-1539, Schenectady, 1909-10) had 23" x 28" cylinders and a boiler pressure of 200 pounds; in 1910 the cylinder dimensions were changed to 25" x 28" and the boiler pressure was reduced to 185 pounds. Nos. 1540 to 1627 were built to these dimensions by Schenectady from 1910 to 1921. Nos. 1629 to 1667 were built to the same dimensions by Dunkirk in 1922 and 1923, but weighed 25,500 pounds more (276,000 pounds as compared to 250,500 pounds).

NORTH WESTERN
CHADRON

Columbia, Newberry & Laurens' train 12← runs 75 miles from Columbia to Laurens, S. C. When this photo was taken at Laurens only a mail-baggage car and a passenger coach remained of its mixed consist. Georgia & Florida's train 18→ is a fast train for a mixed; it makes its 28-mile run in 1 hour 20 minutes.

Photographs on these pages are by Lucius Beebe and C. M. Clegg, from their "Mixed Train Daily, a Book of Short Line Railroads." They are used by special permission of the publisher, E. P. Dutton & Co., Inc., New York. Also see the review of this work in "Of books and trains," page 60.

The daily-except-Sunday mixed train of the Smoky Mountain Railroad↙ runs 30 miles southward from Knoxville to Sevierville, Tenn. The unballasted tracks call for slow speed, so the train averages only 12 miles an hour. The Smoky Mountain Railroad connects with the Southern Railway at Knoxville.

Some assorted mixed trains

The Akron, Canton & Youngstown Railroad (see page 40) is the only short line in Ohio with a daily-except-Sunday mixed service over its entire run. It uses big, modern motive power from erecting shops at near-by Lima. No. 404↗ is rolling out of Delphos on its morning eastbound run to Akron, 162 miles away. The Bellefonte Central↘ has discontinued its mixed train, but at the time this picture was taken during the war, fares were still collected in the green wooden combine. This railroad connects with the Pennsylvania Railroad at Bellefonte, Pa., and runs 18 miles to State College. It owns three locomotives, the combine, and a work car.

The unreliable mixed train

It may run on schedule, or it may not; informality is the rule. If you have the patience to ride it, you can recapture the romance of old-time travel

BY R. W. RICHARDSON

The mixed train is a familiar sight in hundreds of towns and along many miles of weed-grown right of way. This heterogeneous collection of odds and ends of rolling stock is often the only train on a short line or a branch of a larger railroad. It may furnish the only passenger accommodations to small communities in the hinterland.

Rarely is the mixed train on schedule, and even more rarely does it carry more than a handful of passengers. Tickets and ticket-daters accumulate the dust of months, and passenger tariffs become forgotten by crews and agents.

But the mixed train has a fascination — a fascination that grows from the lure of the unusual, the old. Its passenger rolling stock usually consists of hand-me-downs from the main line, or from some more affluent short line. The wooden coach or combine may have ornate transom windows and brass lamps, relics of times when passenger equipment was "elegant" instead of "smart." The locomotive may be a Ten-Wheeler or Consolidation of a generation or two ago.

You can find these trains all over the country, and if you live in a city you may be surprised to find you can even board one in your metropolis. The Chicago & North Western, for example, has a thrice-a-week mixed train which leaves Milwaukee every Monday, Wednesday and Friday. It runs 125 miles to Wyeville, Wis., and returns every Tuesday, Thursday and Saturday. But few Milwaukee people know about this train, for it leaves at 7 in the morning. Although it is due to return at 3 p. m. the following day, it may be quite dark before it actually arrives.

You may be under the impression that Santa Fe, N. Mex., has been without railroad passenger service since the Denver & Rio Grande Western abandoned its narrow-gauge line to that state capital. But this is not the case. An Atchison, Topeka & Santa Fe mixed train runs daily into Santa Fe with a string of freight cars from the main line at Lamy. You can ride the caboose as a passenger.

Informal railroading is the rule on the mixed train. It seldom goes any place in a hurry, and you have ample time to get chummy with the crew and the line. The slow progress and frequent stops can become tedious if you're in a hurry, but if you wish to be transformed from air-conditioned splendor to the homey atmosphere of a caboose or a lamplit sway-backed coach on the end of a string of freight cars, the journey becomes a real adventure.

My first mixed-train ride was on the Akron, Canton & Youngstown across northern Ohio some 25 years ago, shortly after the AC&Y had taken over the bankrupt Northern Ohio Railway from the New York Central. A daily freight and a daily mixed provided service over the line. The engine on the train I rode was a light ex-Nickel Plate Ten-Wheeler. The mail-express car was a rented Pennsylvania Railroad suburban car, and the coach was a wooden open-platform job that had rolled on the main line of the Lake Shore & Michigan Southern in the days of the Columbian Exposition.

Both photos, R. W. Richardson.

The Nickel Plate Road no longer runs its mixed train between Toledo, O., and Frankfort, Ind., but when the top picture was taken in 1939 the mixed train carried not only freight and passengers but also United States mail. The train arrived in Toledo behind a switcher. Baltimore & Ohio likewise has discontinued its mixed run between Newark and Shawnee, O. In 1941, passengers rode in the caboose↑ and waited while the engine did some switching at coal mines along the line.

Norfolk Southern's erstwhile mixed run between Aberdeen and Pinehurst, N. C., carried Pullman cars↙ but no coaches. Notice how the rail line undulates with the ground. The train is headed downhill to Seaboard connections at Aberdeen.

R. W. Richardson.

We started from Akron at a gingerly rate of 6 miles an hour over a shaky steel bridge, then settled down to a 30 m. p. h. pace. We were only half an hour late when we started, but we were over an hour late when we reached Medina, 20 miles down the line. We had stopped once to let an unadulterated freight train go ahead of us. With 140 miles yet to go, with much switching to do all along the line, and with a grade or two to double, you can imagine how late the train became before it tied up at Delphos.

The trainmen wore overalls and civilian hats. As noon approached, they cooked dinner on the coal stove and invited the four passengers to partake of an aromatic stew and coffee. Can you imagine such cordiality on a mainline train? The name trains have nothing to match it. Sitting in the rear seat, watching the countryside unroll, we had all the pleasures of a private car.

Since that first trip, I have ridden mixed trains on more than 30 lines, large and small. More than once I've been the only passenger, sometimes the first in months. In one week I rode five mixed trains in Pennsylvania, and on three of them I was the only passenger. One of these trains was on the Sheffield & Tionesta, a 35-mile lumber road whose terminal was the ghost town of Nebraska and whose *Official Guide* listing was typical of short line timetables:

> Train leaves Nebraska *a*8 00 a. m., Kellettville *a*9 15 a. m., arriving Sheffield (35 miles) 11 04 a. m. Returning, leaves Sheffield[1] *a*12 20 p. m., arriving Kellettville (24 miles) 3 55 p. m., arriving Nebraska, Pa., 4 26 p. m.
> *a*Tuesday and Friday.
> Connections. — [1]With Pennsylvania RR. and Tionesta Valley Ry.

If the train was ready to go before the scheduled 8 a. m. departure, it left without waiting for the clock to catch up to it. If traffic warranted running on some day other than the scheduled Tuesday or Friday, then there wasn't any train on Tuesday or Friday.

A bantam Baldwin 4-4-0 struggled over incredibly poor track up the beautiful Tionesta Creek valley with some abused lumber racks, a few box cars, and a former PRR open-platform coach. I was the first passenger in more than a year, and the coach looked it. Some window panes were gone, platform boards and underframe were rotten, and the plush seats were preserved under a thick layer of dust and cinders. The last coat of paint, ordinary red barn stuff, was nearly gone, and underneath I could faintly see the peeling gold leaf of 25 years before. In boom days this coach had been jammed; but the mills and the loggers were gone with the timber, and the weekly traffic consisted of only a few

R. W. Richardson.

The Wabash Railroad's train 71 between Toledo, O., and Ft. Wayne, Ind., is listed as a freight train but passengers may ride in the caboose. They must board and alight from the train where ever it stops in the yards↑. This picture was taken at Napoleon, O., 36 miles west of Toledo. Besides this scheduled freight train, Wabash also runs a daily passenger train over this line. Travelers who miss the passenger train ride the caboose of the freight to avoid a 24-hour delay.

M. B. Cooke.

The Clarion River Railway's 1937 mixed train was pulled by a Heisler geared engine↖ originally built for the narrow-gauge Tionesta Valley Railroad. This locomotive still huffs and puffs over the 11-mile Clarion River Railway carrying mail, express and freight, but no passengers. The two cylinders of the locomotive are set at a 90-degree angle and work on a central drive shaft which is geared to each of the four-wheel trucks. Side rods connect the wheels of each truck.

R. W. Richardson.

Big roads as well as little roads make use of the lowly mixed train. Missouri-Kansas-Texas runs a daily-except-Sunday mixed→ on its El Dorado Division, a branch line extending 14 miles from the main line at Walker, Mo., to El Dorado Springs. The train stops twice between its terminal stations and makes the run in 50 minutes. It leaves El Dorado Springs at 6:45 each weekday morning, returns at 2:25 p. m.

cars of forest products and coal. Now the railroad itself is but a memory.

A mixed train ride I'll never forget was on the Susquehanna & New York [January 1943 TRAINS]. This road has also been abandoned. Ten-Wheeler No. 119, formerly of the Huntingdon & Broad Top Mountain [March 1947 TRAINS], wheeled a short string of cars with a nicely varnished open-platform combine along the Pennsylvania main line to Marsh Hill Junction. This was a fast trip — 50 miles an hour. Progress from Marsh Hill Junction was much slower as No. 119 twisted up the steep hills toward Towanda. The road's chief engineer and the railfan son of the brakeman contributed to a pleasant trip which was topped off with a fast ride down the hills in 119's cab. Once we slid far past a mountain flagstop.

Another interesting ride took me over the Kishacoquillas Valley Railroad [abandoned]. I went to Belleville, Pa., and found a 4-6-0 coupled to a box car and two large, wooden, vestibuled, transom-window coaches. The conductor, newly elected as county treasurer, was dressed in a brand-new blue suit with shining KV monograms on the lapels. His clothing did not deter him from helping the station agent load express on the rear platform. The agent locked up the depot and climbed aboard to act as brakeman, and we were off.

The train stopped at a couple of farmhouses to pick up some children who held up their hands as a signal. Between Reedsville and Lewiston we stopped about every two blocks, just like a street car; and soon the coaches were full of Saturday shoppers. And like a street car, the train went down a street in Lewiston and stopped in front of the principal hotel.

We made connection with a Pennsylvania train at Lewiston, then made a short round trip to Reedsville. Here the Belleville agent took over still another job: that of operator of the "motor car," as the timetable described President Getter's old Studebaker with flanged wheels. This car, plus a push car for a trailer, picked up a Belleville passenger, a Mennonite family, and me. The Mennonite kids in their old-fashioned clothes delightedly rode the trailer and studiously avoided the camera every time I snapped the train. At one point the engineer (or was he "driver"?) got out and got under to explore the cause of the horn's failure.

Late that same afternoon I drove past the Bellefonte Central depot at State College, Pa. There was the mixed, hours late, ready to pull out. An ugly Consolidation headed the string of box cars, and I had the run of the center-door combine. The last few miles were covered at a very slow pace as we switched at quarries. The locomotive pushed the train into Bellefonte about five hours late on an 18-mile run.

America's most scenic mixed run is undoubtedly on the narrow-gauge Durango-Silverton line of the Denver & Rio Grande Western [August 1942 TRAINS]. The right of way winds for 45 miles up the canyon of the Rio de Las Animas amid the high peaks of southwestern Colorado. The train I rode was the first in nearly two weeks, due to floods and washouts. Track in the valley near Durango still had a few inches of water, and farther up the canyon section men were putting the finishing touches on a shoofly around a slide. The old track still lay in the middle of the rocky stream.

The train consisted of two locomotives, 15 cattle cars, some other freight cars, a combine, and a caboose. We labored around some sharp reverse curves, first up a wide valley, then on a shelf blasted from the cliffs far above the river, and finally very close to the water. The train was seldom strung out in even a fairly straight line. Often the leading locomotive was moving in a direction opposite to the direction of the caboose. Both the scenery and the railroad was impressive as seen from the cupola of the caboose: mountain grandeur and railroad engineering and operation in a very difficult country. Service on this line was modernized last summer with a glass-roofed observation car known as the *Silver Vista*. The D&RG advertised the new service nationally and was rewarded with a larger passenger traffic than had been expected.

Look up the Flemingsburg & Northern and you'll find two mixed runs scheduled between Flemingsburg and Flemingsburg Junction, Ky. The consist is a day-to-day, hour-to-hour affair. It may be a leased L&N Consolidation plus a caboose, or a gas car with a homemade appearance, or even a truck running on the highway. The day I rode the line, traffic was at such a low ebb that a few express packages were loaded onto the tender of the Consolidation, and I, again the sole passenger, was seated on the fireman's cushion. The crew consisted of engineer and fireman only. Two stops were made during the 6-mile run: one for water, and another to pick up my hat after the wind had blown it off. On the return trip we carried two hopper cars of coal which the Louisville & Nashville had dropped off at the Junction.

A mixed run which was pulled by a wood-burner until 1943 is on the Live Oak, Perry & Gulf [November 1946 TRAINS] in Florida. The train leaves Live Oak early in the morning and makes two round trips to Perry. The neat 1915 Baldwin cabbagestack Ten-Wheeler left a trail of red sparks among the palms and moss-dripping oaks. This train, now coal fired, runs through the swampy cutover lands of northern Florida, and hauls timber products from Foley, the mill town, to connections at Perry and Live Oak. Once a day it detours at Mayo Junction to serve Mayo, 12 miles off the main line along the Suwanee River.

The swankiest mixed train of all used to run on the Norfolk Southern between Aberdeen and Pinehurst, N. C., a distance of 6 miles. Pinehurst is a popular winter resort, and before the war, during the resort season, the morning freight train picked up as many as nine Pullmans from the Seaboard's southbound *Robert E. Lee* at Aberdeen. The freight crew sandwiched the Pullmans between the locomotive and a string of freight cars (this in itself was an unusual practice), and the train roared out of Aberdeen to get a running start for the winding grades to Pinehurst. On numerous occasions it had to double the hill.

In the afternoon the crew remade the train while fashionably dressed resorters said farewell to their vacation friends. The Pullmans were again coupled into the freight and taken back to Aberdeen to connect with the northbound *Robert E. Lee*. The train carried no coaches, only freight cars and Pullmans. It was an odd sight to see the Consolidation locomotive coming down the hill with its Pullmans, white-clad porters lounging in the vestibules, and with a string of freight cars, a little wooden express car, and a caboose at the tail end.

R. W. Richardson.

Both photos, R. W. Richardson.

The Live Oak, Perry & Gulf Railroad in Florida runs nothing but mixed trains, and when the maintenance department decides to replace some ties, the passengers wait while the crew unloads the new ties along the line. The LOP&G was one of the last common-carrier roads in this country to use a wood-burning locomotive. The Moscow, Camden & San Augustine Railroad (top↑) connects with Southern Pacific's line from Houston to Shreveport at Moscow, Tex., and serves the mill town of Camden, where the picture was taken. The Wichita Falls & Southern Railroad runs a mixed train from Breckenridge, Tex. (bottom↑), to Dublin, and another from Breckenridge to Wichita Falls. Southern Pacific has two mixed runs on its Gonzales-Harwood branch→. This is part of the former Texas & New Orleans system. Engine 219 and its two cars are at the Harwood end.

R. W. Richardson.

The railroad over the sea

For 23 years the Florida East Coast Railway operated trains along the Florida keys. It connected the mainland with Havana ferries at Key West

BY CHARLES LAYNG

The construction of the Florida East Coast Railway's Oversea Extension to Key West was a spectacular achievement. The line remained spectacular during its 23 years of operation, and it came to a most spectacular end.

A number of 125-mile lines have been torn up in the past few decades, but the demolition of this railway was unique; it came in a disaster of intense drama. On September 2, 1935, a 40-mile section of the line was struck by a tropical hurricane that swept some of the track and roadbed into the sea and left the rest in a mass of tangled wreckage. To the credit of the engineers who designed the numerous bridges along this line, not a single bridge suffered any damage, although the track on several of the concrete arches was swept away.

Now a highway runs across the Florida keys on the abandoned roadbed and across the sturdy bridges that formerly carried one of the strangest and most remarkable railways on earth — a railroad that was called "the eighth wonder of the world" when it was built. Service over the line began in 1912.

As early as 1894, Jefferson B. Browne, then collector of customs for the port of Key West, began agitating for a railway across the keys to the mainland. He suggested that the logical man to build it was Henry M. Flagler, a multimillionaire who got into the railway business more or less by accident. He was a former partner of John D. Rockefeller in the oil business, and had retired at the age of 60.

Flagler had gone to St. Augustine, Fla., for his health. He was struck by the possibilities of the place as a winter resort, and built three large hotels there. To supply transportation, he purchased in 1885 a narrow-gauge railroad which ran between St. Augustine and South Jacksonville. Ferries carried passengers and freight across the wide St. Johns River to Jacksonville proper. Flagler turned the road into a standard-gauge line and built a bridge over the river to give St. Augustine direct rail connection with the North. Shortly after this he purchased two other lines which extended his railway as far south as Daytona.

By this time Flagler had become an enthusiastic railroader, and he built south until he had a line to West Palm Beach, 299 miles south of Jacksonville. He erected two more hotels at Palm Beach, then extended his railroad 67 miles to the struggling village of Miami.

The extension of the railway south from Miami was prompted by the idea of a rail-water terminal at Cape Sable for traffic from the West Indies and South America. A preliminary location line was run from Miami to East Cape at Cape Sable, about 78 miles, in the winter of 1902-03. Construction was begun in January, 1903. The line was temporarily halted at Homestead in June, 1904.

The building of these lines along the flat east coast of Florida offered no particular handicaps except for the construction of several large bridges over tidal estuaries. The ruling grade on the FEC main line is 0.3 per cent.

The idea of building on to Cape Sable was abandoned when the construction of the Panama Canal was authorized. Instead, a route was surveyed from Homestead to Key Largo and from the key to Turtle Harbor, a natural deep harbor protected by a barrier reef. At the same time the possibility of a line across the lower keys into Key West was investigated. As a result, on May 3, 1905, the Florida legislature approved the construction of the railroad to Key West.

Construction was begun in 1905 at Homestead. Two miles south of that point, at what is now Florida City, swampy land was encountered and two dredges were put in service to cut through to Jewfish Creek, which separates the mainland from Key Largo. Once the building of the line in the keys began, the largest fleet of marine equipment ever used in building a railroad was put in service. It included everything from giant dredges to Mississippi River steamboats. The total distance from Homestead to Key West is 128 miles; 21 miles of the railway were on the mainland and 107 miles crossed the chain of islands.

The job involved assembling 19,000 tons of structural steel, 2,000 tons of reinforcing steel, and 461,000 cubic yards of concrete. A total of 800,000 barrels of cement was used. Ships brought in 96,000 tons of rock from Clinton Point, N. Y., and 78,000 tons of gravel from Chesapeake Bay and Savannah, Ga., while 300,000 cubic yards of coraline rock was dredged from the sea bottom along the project for concrete. Also required

The Knights Key Bridge was the longest on the Oversea Extension after a span was substituted for an embankment on Pigeon Key. The photograph was taken from Pigeon Key and looks toward Key West. This 6.76-mile structure was south of the storm area in the 1935 hurricane which destroyed 40 miles of line. Now it is part of the Oversea Highway constructed on the old roadbed.

All photos from the collection of Charles Layng.

were 70,000 pine poles, 100,000 tons of fill between the spandrels on the concrete arches of the bridges, and approximately 20 million cubic yards of rock, sand and marl for embankments. All of this, other than the local rock, sand and marl, had to be transported and assembled on and between a series of uninhabited islets, far from anywhere.

The construction had to be particularly strong, because it was known that this key district is swept by hurricanes every few years. Particular care had to be taken not only of the structures but also of the lives of the workers during the hurricane season. At that time the approach of hurricanes could be foretold only by barometer readings in any particular locality, since there were no radio or telegraph warnings from other places. Even a drop in the barometer, however, could not always be depended on; it could not indicate the direction or velocity of a storm area but only warned that one was near. In view of this, the safety record during construction of the line was remarkable.

Colored labor was used extensively, but a large percentage of the force consisted of white labor recruited in the large centers of population in the East, mostly from the territory around New York. Other white labor came from the West Indies. Many Spaniards and Greeks, as well as Cubans, were also employed. The Greeks, who had been trained as sponge divers, did most of the sea diving.

Except for the viaduct at Long Key,

The Havana Special↖ was one of two daily trains which plied the key waters in both directions. The other was a local which made all stops between Jacksonville and Key West, 522 miles.

One of the tourist attractions along the Overseas Extension was this fishing camp↖ on Long Key. It was in the heart of the 1935 hurricane area, and was destroyed with the railroad.

Passengers for Havana left the Havana Special at dockside on Key West and boarded the connecting Peninsular & Occidental steamship "Governor Cobb"↘ on Tuesdays, Thursdays and Saturdays; on Mondays and Fridays the connecting boat was the "Cuba" of the P&O line. The transfer from train to boat involved a 1½ hour layover southbound; from boat to train northbound involved 2 hours.

A large crowd greeted the first train↖ on its arrival in Key West on January 22, 1912. Among the dignitaries present were Henry M. Flagler (straw hat↗) and the mayor of Key West in swallow-tailed coat and stove-pipe hat. Flagler was 82 when he saw fulfillment of his dream.

only six relatively short bridges were necessary to carry the railway to the western end of Knights Key, about two-thirds of the distance to Key West. These bridges included a drawbridge at Jewfish Creek and another at Indian Key. Both were 100 feet long. The Indian Key bridge was replaced by a fill shortly after the line was opened, thus providing a solid embankment 2.2 miles in length between Upper and Lower Matecumbe keys.

The Long Key viaduct was originally 1.98 miles long and consisted of 180 concrete arches. After the south approach embankment was washed out, a 0.29-mile extension was added to the bridge, making its total length 2.17 miles.

A temporary rail-water terminal was established at the north end of an open anchorage known as Knights Key Harbor. This was about half way between Knights Key and Pigeon Key. The controlling depth was about 20 feet in the approach channel and in the harbor. A temporary trestle was carried from Knights Key to the harbor, where the temporary dock was built to receive construction materials from North Atlantic and German ports. The dock was also used for passenger steamers to Cuba.

The engineers planned to construct a bridge 1.29 miles long, followed by an embankment 1.12 miles long and another bridge 4.35 miles long, between Knights Key and Little Duck Key. However, the embankment on Pigeon Key was damaged by a storm and a bridge was substituted. The final structure consisted of 5.05 miles of steel spans on concrete piers and 1.71 miles of concrete arches — a continuous structure 6.76 miles long. It was this bridge that brought about the slogan "Out of Sight of Land by Pullman Car."

South of Knights Key the principal bridges were Bahia Honda, 0.96 mile long; Spanish Harbor, 0.62 mile long; Niles Channel, 0.58 mile long, and Boca Chica, 0.49 mile long.

The first train was run into Key West on January 22, 1912, just 20 days after Flagler's 82nd birthday and 16 months before he died. For four years trains were operated over many temporary trestles and runaround embankments. Construction of the permanent structures and the docks at Key West was not completed until 1916. The huge project cost more than $30.8 million [about $78 million in present values, based on consumer price index].

A ferry slip was built as a part of the Key West terminal facilities, and freight car ferry service between Key West and Havana, Cuba, began in 1914 on the ship *Henry M. Flagler*. In 1916 another car ferry was added, and in 1919 a third ship went into service. The large volume of freight moving to Cuba via the FEC and the ferries consisted of sugar mill machinery, construction materials and equipment, railway supplies and equipment, and a wide variety of miscellaneous merchandise. At times, during the sugar boom in Cuba, there were as many as 900 freight cars on the FEC consigned to Cuban points, and the three car ferries operated at top speed between Key West

Freight cars from rail's end at Key West were transshipped by steamship to Havana, where they were unloaded↙. During peak sugar seasons the northbound traffic kept three car ferries busy. The last gap↙ in the Oversea Extension was closed on January 21, 1912, at Knights Key Dock, the temporary port where construction materials were received by boat from German and North Atlantic points. The curved trestle is the temporary rail line by which materials were transported from the dock to the point of construction. Notice how it bisected the line of the permanent way. Construction of the railroad cost more than $30.8 million.

After the hurricane passed, 40 miles of the Oversea Extension lay in ruins. Cars were blown off their trucks↑ and rails were twisted and piled high with debris↗. In some sections where trestles had been covered with fills, the roadbed was washed out from around the wooden piles.

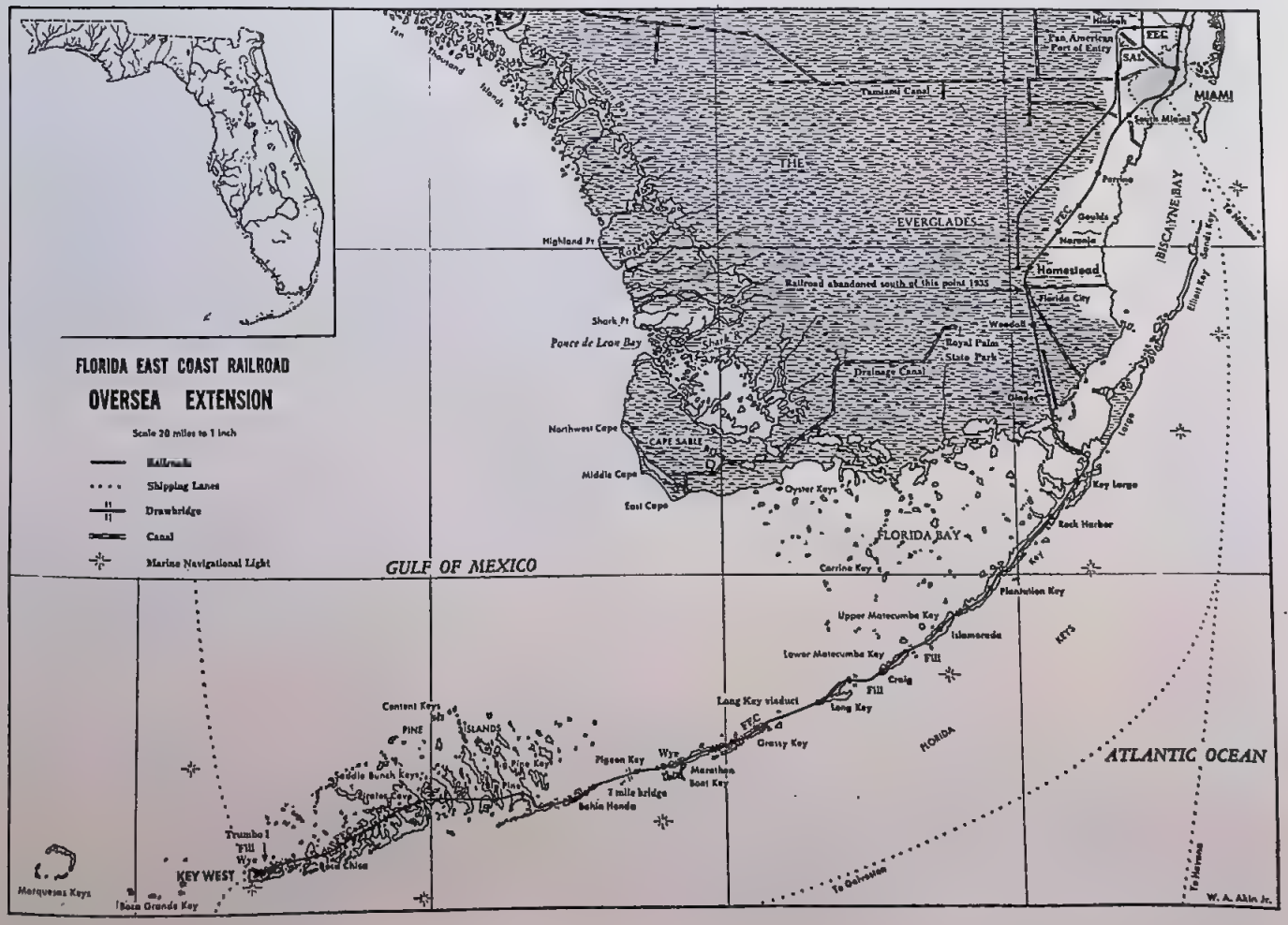
and Havana. Northbound, the heaviest single freight movement consisted of Cuba-grown pineapples.

Hurricanes of varying degrees of violence assaulted the line at periodic intervals. It was found that marl, dredged from the sea bottom and used for embankments, was most resistant to wave action if protected with a toe wall at the normal water line and if the surface above the water were maintained without breaks. Marl pits were opened and the marl was excavated by means of dipper dredges. It was loaded into dump cars and hauled to the point of deposit, where the self-cementing material was spread as a protective blanket on the core of the roadbed.

When the devastating storm struck in 1935, a number of men inexperienced in the ways of hurricanes were on the keys in construction camps, engaged in the early stages of building the Oversea Highway. The government asked the FEC to run a rescue train, but the request came too late. The train, manned by FEC officers and employees who knew they were taking their lives in their hands, was blown from the track before it could reach the doomed men.

Hundreds of road workers managed to save themselves as the first blow passed over them on that Labor Day in 1935, but in their inexperience they assumed that the danger was over, and they were caught and killed in the second blast as the hurricane passed on. The slaughter was terrific. Several hundred men were killed and only a few escaped without some serious injury.

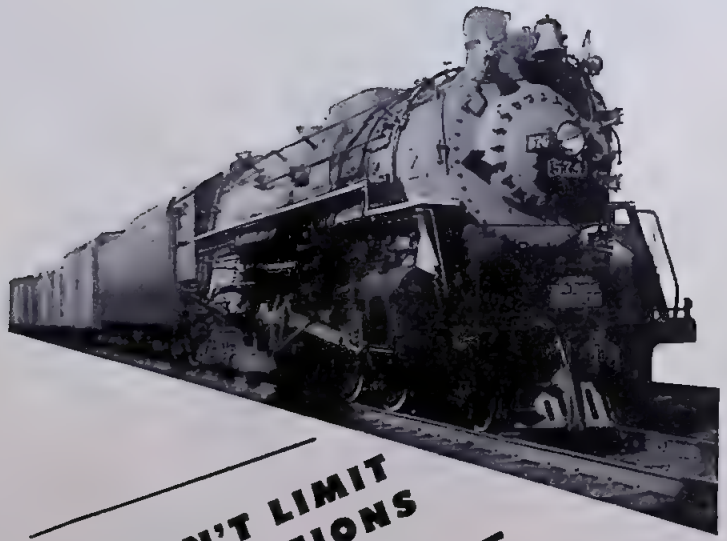
It is unlikely that any hurricane ever hit a railway anywhere else with the



The train sent to rescue stranded highway workers never reached its destination. The locomotive and seven cars were blown off the tracks.

force of this one. The extreme limits of the damage were between mileposts 429 on the north and 471 on the south, between Key Largo and Vaca. The FEC abandoned the line from milepost 397, just south of Florida City on the mainland, to milepost 522 on the Havana pier at Key West. From this 125 miles of line, 114 track miles of usable 90-pound rail and fastenings were later recovered. Scrap rail and fastenings from the damaged sections amounted to some 5500 tons.

Today the Florida East Coast Railway operates 426 miles of main line and 256 miles of branch lines, all in the state of Florida. Soon it will lose its identity as an independent railroad, for the Interstate Commerce Commission has approved the FEC's consolidation with the Atlantic Coast Line.



DON'T LIMIT OPERATIONS

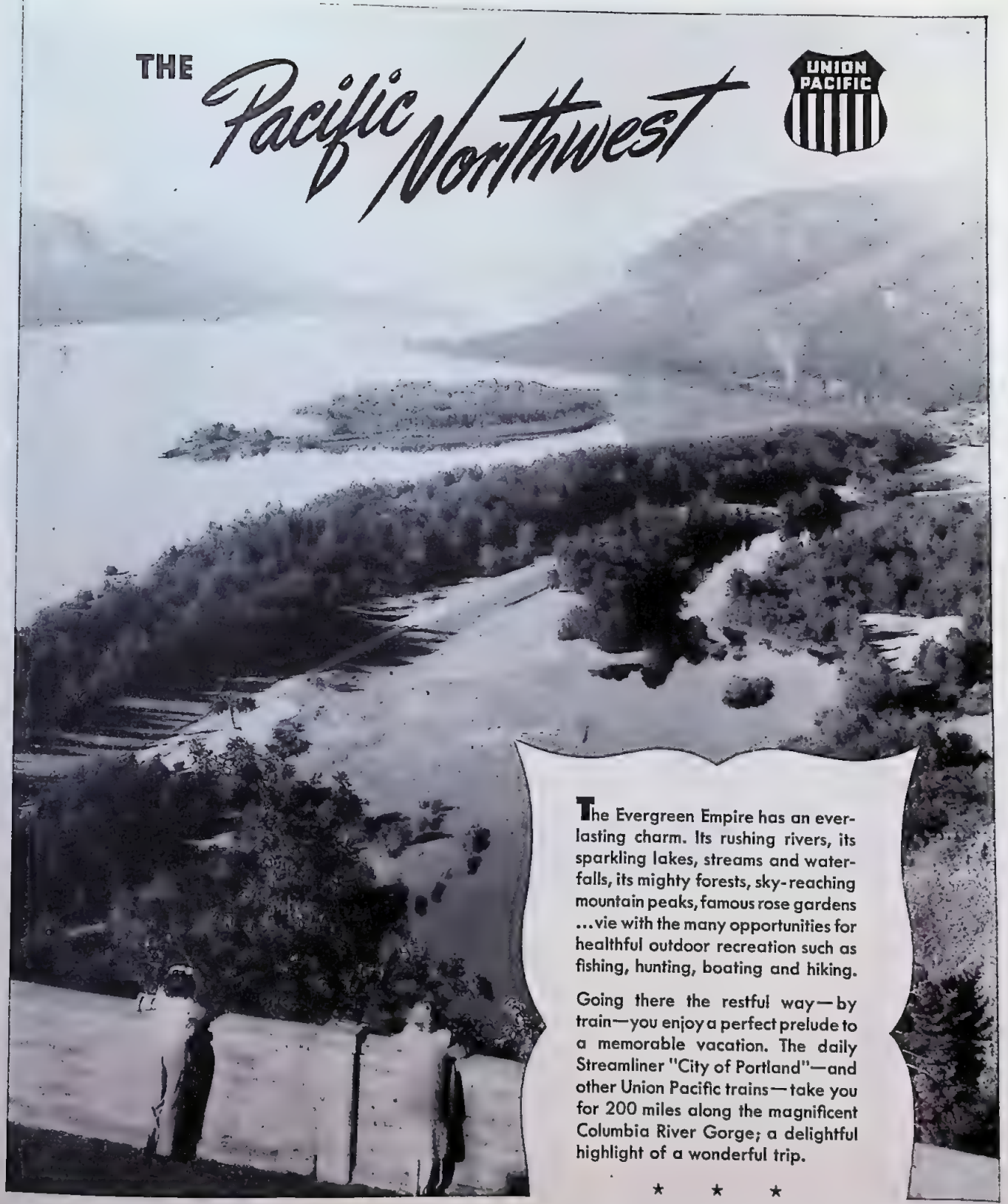
EFFICIENT operating personnel are limited by the equipment with which they work . . . and only modern power can successfully meet today's freight demands.

Give your personnel adequate equipment . . . up-to-date equipment such as the modern Lima-built steam locomotives being used so successfully on the Richmond, Fredericksburg & Potomac in high-speed freight service.

LIMA LOCOMOTIVE WORKS INCORPORATED, LIMA, OHIO

THE *Pacific Northwest*

UNION PACIFIC



The famous Columbia River Gorge

The Evergreen Empire has an everlasting charm. Its rushing rivers, its sparkling lakes, streams and waterfalls, its mighty forests, sky-reaching mountain peaks, famous rose gardens ...vie with the many opportunities for healthful outdoor recreation such as fishing, hunting, boating and hiking.

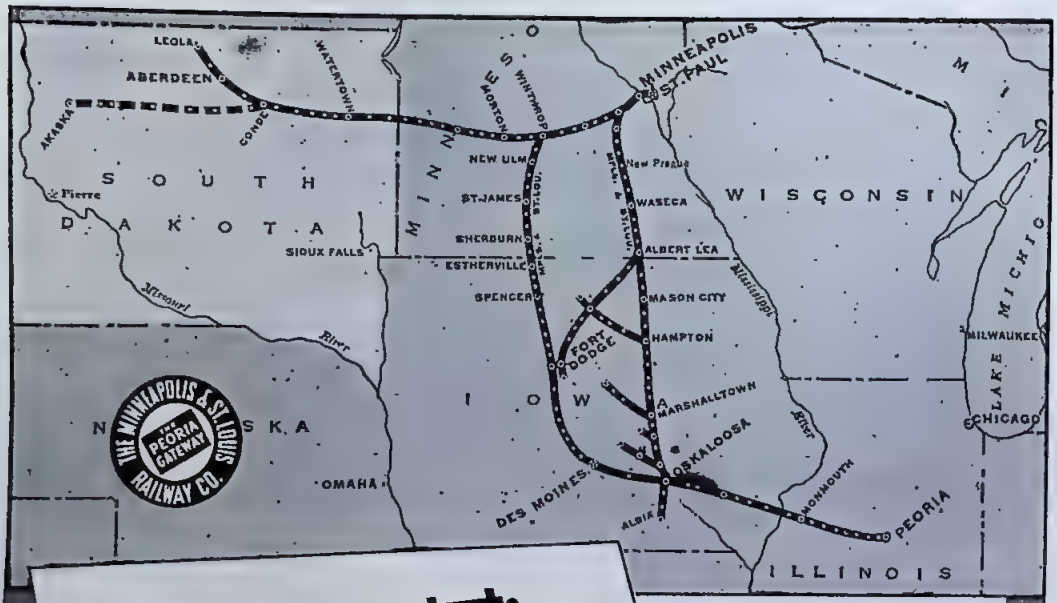
Going there the restful way—by train—you enjoy a perfect prelude to a memorable vacation. The daily Streamliner "City of Portland"—and other Union Pacific trains—take you for 200 miles along the magnificent Columbia River Gorge; a delightful highlight of a wonderful trip.

★ ★ ★

Write for your free copy of an attractive Pacific Northwest booklet. Address Room 134, Union Pacific Railroad, Omaha 2, Nebraska.

UNION PACIFIC RAILROAD

Road of the Daily Streamliners



Transportation

FOR South Dakota

The great young state of South Dakota is served by The Minneapolis & St. Louis Railway through two important gateways, Watertown and Aberdeen, located in one of the richest sections of the Sunshine State.

South Dakota, a leading producer of corn, oats, spring wheat, cattle, hogs and poultry, is harvesting another big grain crop. On the solid foundation of these and other sources of wealth, South Dakota is rapidly building a prosperous industry.

To manufacturers and distributors in varied lines, South Dakota offers advantageous locations in its many thriving communities.

The M. & St. L., a modern, efficient freight railroad, provides constantly improved transportation service for South Dakota industry, as it has in more than a half-century for South Dakota agriculture.

TRAFFIC OFFICES IN 36 KEY CITIES · LINKED WITH TELETYPEWRITER SERVICE

The Minneapolis & St. Louis Railway

Times have changed

Old and new rub elbows in the South these days.

Modern factories rise but a stone's throw from scenes of storybook charm and tradition all along the 8,000-mile Southern Railway System.

And there's a reason . . .

Business men who view the future realistically have discovered that the South is an "opportunity-land" beyond belief...with every factor favoring industrial growth and prosperity.

In this fastest-growing industrial area you'll find new opportunity for your business, too... in these changing times... when you "Look Ahead —Look South."

Ernest E. Norris
President

LOOK SOUTH
LOOK AHEAD

SOUTHERN RAILWAY SYSTEM

The Southern Serves the South

Peter Josserand.

Western Pacific.

It takes a lot of men to run a crack train such as Western Pacific's Exposition Flyer↖. The minimum crew↑ consists of 1 conductor, 1 ticket conductor, 1 Pullman conductor, 1 engineer, 1 fireman, 1 brakeman, 1 flagman, 1 news agent, 1 train baggageman-express messenger, 1 tavern car attendant, 2 stewards, 2 chefs, 2 pantrymen, 2 chair-car porters, 6 cooks, 7 Pullman porters, and 8 waiters — 39 in all. The train normally consists of 1 baggage car, 3 coaches, 2 tourist sleepers, 2 diners, 5 standard Pullman sleepers and 1 observation-lounge car. A longer train requires a bigger crew.

Tankless steam loco

At Hannibal, Mo., the Chicago, Burlington & Quincy switcher works the transfer table without any tank at all. It leaves its tank on a convenient siding and returns to it occasionally for water and a few more scoopfuls of coal.

Railfans' timetable

The 97 members of the Illini Railroad Club, Champaign-Urbana, Ill., benefited from an idea of member Arthur R. Wildhagen. Wildhagen compiled a "Railroad Fans' Timetable" of all trains entering and leaving the twin cities. Both first- and second-class trains of all four railroads are listed in chronological order, and it's a simple matter to find out where you should be at any given time to see the railroads in action.

For instance, if you happened to be in Urbana at 12:15 p. m., a quick glance at the timetable would show that you had only two minutes to wait before you could see the westbound Illinois Terminal local passenger train No. 75 stop at the station. If you were in Champaign at 12:23 you could see No. 75 make a meet with eastbound 72.

The mimeographed timetable includes a sketch map showing the railroads, stations, and yards, and a list of whistle signals commonly heard in the area.

Champaign-Urbana
Illinois

Railroad Fans' Timetable No. 1

Effective
April 27, 1947

Standard Time		Station	RR.	Class 1st	Class 2nd	Direction, Train Name and Notes
3:13 am		Urbana Yd.	P&E	43		w Night Express
3:40 am	A	Champaign	IC	25		s Southern Express
4:00 am	L					
9:45 am	A	Champaign	IC	1		s City of New Orleans (streamliner)
9:50 am	L					
10:12 am	S	Urbana	WAB		31	w Local freight
10:30 am	A	Champaign	WAB			(ex. Sun.)
12:17 pm	S	Urbana	ITS	75		w Local passenger
12:23 pm	S	Champaign	ITS	75[72]		
12:23 pm	S	Champaign	ITS	72[75]		e Local passenger
12:28 pm	S	Urbana	ITS	72		
2:30 pm	A	Champaign	IC		694	e Havana District local freight (Tue., Thur., Sat.)
2:57 pm		Urbana	P&E	11		w Day Express
3:03 pm	S	Urbana	P&E			(ex. Sun.)
3:16 pm	S	Champaign	P&E			

Abbreviations Used

IC — Illinois Central
P&E — Peoria & Eastern (operated by NYC)
ITS — Illinois Terminal System (electric)
WAB — Wabash

A — Arrive
L — Leave
S — Stop
Yd. — Yard

Example of Arthur R. Wildhagen's timetable for railfans. Champaign-Urbana have 53 trains a day.

Railroading doctor

Dr. Matthew A. McGrail of Bradford, Pa., is perhaps the only medical man who holds membership in the Brotherhood of Locomotive Firemen & Engineers. While serving as a commander in the navy medical corps during the war he was stationed at a southern naval station, and he often found time to work as an extra fireman on the Seaboard Air Line Railroad. He once performed a surgical operation on a member of his own train crew, the engineer.

Attack on profits

From *Railway Age*, September 13, 1947.

In the opening discussions of the rate increase proposals the opposition made it clear that its main line of attack will be based on the strange philosophy that the railroads, unlike all the other forms of private enterprise, have no legal or moral right to make a profit in the operation of their business, or to pay any dividends to the private investors who have put up the money to build and improve the railroads. The opposition argues that it is all right for a producer of fruit or gum boots or chemicals or corn or cotton or overalls to make a profit, but all wrong for a railroad. The railroads argue that they are entitled to the judicially established reasonable rate of return. The commission is the arbiter. Strangely enough, while shippers' counsel are conspicuous in trying to demonstrate the iniquity of a profit when it is earned by a railroad, much of the opposition to the rate increase comes from the state commissioners' lawyer. Foresighted selfishness would lead shippers to support, not to oppose, the railroads' position, because it is the shippers who will lose most if

the railroads are not allowed to earn enough to maintain employment, to sustain their credit, and to enlarge their facilities so they can continue to render the most efficient transportation service.

College pike

Almost a required part of their curriculum for 14,000 college students at Columbia, Mo., is a ride on the Wabash Railroad's Columbia local, which links Columbia with the main line at Centralia, 21.7 miles to the north.

For five days a week the branch line over which the local runs is a typical sleepy country railroad winding through the rolling Missouri hills, but on week ends it erupts into activity when students at the University of Missouri and Stephens and Christian colleges seek recreation in St. Louis or Kansas City. The real boom period comes at the beginning and end of vacation periods, when as many as four 10-car extras may pull out of or into Columbia daily.

The "Centralia Flyer," as it is nicknamed by its riders, takes 45 minutes to cover the single-track pike on five daily round-trip schedules. One trip a day makes a scheduled stop at Hallsville, 8.7 miles south of Centralia, and flag stops are made at the hamlets of Browns, Stephens and Switzler. It was at Hallsville, on one supposedly balmy April day 20 years ago, that 600 students on the "Flyer" were snowed in for almost eight hours before a section gang came down from Centralia and shoveled them out.

The consist is usually one ancient coach and a combination coach and baggage car, but one train daily is mixed freight and passenger→.

Motive power is generally a Class D-6 diesel of the 200 series, built by Baldwin in 1941. An occasional substitute is a Class J-2 Pacific of the 600 series. These high-stepping old girls were originally built by Baldwin in 1903 as 4-6-0 freight engines of the 2000 series, with a speed restriction of 50 miles per hour. They were reshopped in 1907 and came out with trailing wheels and larger drivers.

Columbia, with a population including students of approximately 35,000, has no through railroad service. A branch line of the Katy runs south 7 miles to McBaine, where it connects with the main line from St. Louis to Fort Scott, Kan., and Dallas, but the Wabash and Katy spurs in Columbia do not connect.—*Albert C. Andrews Jr.*

No more free passes

The Very Rev. Thomas Plassman, O.F.M., president of St. Bonaventure College at Olean, N. Y., used to be known also as the president of the Bonaventure Railroad. This 300-yard line hauled supplies from the Pennsylvania Railroad's Allegheny River branch to the campus boiler room.

As president of the railroad, Fr. Plassman used to exchange passes with other railroads. "We may not be so long as other roads, but we can match them in width," said the priest.

Now the St. Bonaventure Railroad has been torn up to make room for a new administration building.

John Coosehek.

The Pacific Great Eastern Railway offers an unusual "ferry service" which hauls automobiles and passengers on special flat cars and operates 15.3 miles between Lillooet and Shalalth, B. C., Canada. A highway between towns would be expensive to build because of mountainous terrain.

Albert C. Andrews Jr.

Wabash mixed train heads out of Columbia, Mo., with three cars of hogs, an empty box car, a coach, and a combination coach-baggage car. The locomotive is a Baldwin diesel switcher.

Swiss Federal Railroads.

The Swiss Federal Railroads have celebrated their 100th anniversary this year by exhibiting a replica of the Limmat locomotive which made the first rail trip from Zurich to Baden in 1847. Here the replica is pictured alongside one of the light express electric engines in general use today. Ninety per cent of Switzerland's rail lines are now electrified; water turns the generators.

Railway post office

He blows his top

I blow my ever-lovin' top at the context of various letters in the Railway Post Office: "Air horns disgust me," "Passengers favor diesel; no smoke," plus the time-honored arguments about the unfair comparison of steam and diesel power. How in the good name of railroading can so many soreheads amass such a pile of childishness in favor of their particular form of motive power? The diesel has taken on political color! . . .

Hell, I mourn the passing of the steam locomotive as loudly as the next, but my ravings are tempered by the fact that I like railroading — technically, mechanically, its great legend. I want to see them all prosper by service to the nation, not wallow in their own inefficiency and stupidity as they have shown themselves *so* capable of doing in the past. That's all!

Robert Joseph Powers.

Barrett's Mill Rd., Concord, Mass.

He blows his horn

I have been particularly amused by the support of the steam whistle, even on the part of diesel fans — but I hereby cast a dissenting vote. To my amateur musical ears there is nothing more pleasing in the night — or day — than the blast of a two-tone air horn. . . . To me they are tops. And the top of tops is the beautiful touch of the engineer of the westbound *Rocket* out of Lincoln about 11:30 p. m. There is a real artist.

George M. Fraser.

314 Lee St., Evanston, Ill.

He loves 'em all

The late Will Rogers said he never saw a man he didn't like. That's the way I feel about trains — be it steam, diesel, or electric, I've never seen a train I didn't like. . . . To those critics of the electric, let them fire a hand-fired Consolidation on a double-header up a mountain grade with a tonnage train of 11 cars, and with a hard-hitting engineer and some John L. Lewis swell-belly (that's the coal we get when John is on strike); let them fight the steam gauge and the low water alarm — and then let them swing out of Washington Terminal on a GG-1 with 16 passenger cars, or pull out of Potomac Yard with a jag of over 100 freight cars behind a GG-1.

Frank Clodfelter.

9 Plymouth Circle, Asheville, N. C.

Train keeps him awake

A couple of weeks ago I did something that only a railroad "nut" would think of. I stayed up all night to ride the Great Northern's new streamlined *Empire Builder* to Fargo and back. There is no logical explanation for such foolishness. To the ignorant who do not understand I merely say that nothing surpasses the thrill I get out of a fast train ride and the opportunity it gives me to observe things that are of interest to every railroad fan.

R. O. Johnson.

4515 47th Ave. S., Minneapolis, Minn.

Sawed-down dwarf signal

How low should a dwarf signal be? I found this one on the Manhattan Division

of the Interborough Rapid Transit, New York City Transit System.

J. de Rozario.

161-5 W. 12th St., New York 11, N. Y.

Take a ride on the Reading

I enjoyed Frank P. Donovan Jr.'s article "Take a Ride on the Reading" in the August issue. I am not going to "take issue" with him; I merely want to point out a few things.

He states "Perhaps . . . the rug under your feet is from Wyomessing Mills in Reading." In Wyomissing, a suburb of Reading, the Wyomissing Industries produce hosiery and knitting machinery. In Reading itself, hosiery is the leading manufacture. Next best-known product is probably the pretzel. In Lancaster, 36 miles away, linoleum is manufactured. I think you will have to look hard to find any rug industry in Reading. . . .

Raymond E. Melmet.

75 Warren Ter., Longmeadow 6, Mass.

. . . We are delighted with the Reading article. It is exceedingly well done and one of the most comprehensive that has ever been published.

I. L. Gordon.

Publicity Manager, Reading Co., Philadelphia, Pa.

Railfan vacation trips that the Mrs. will enjoy too

I believe TRAINS readers are in a position to be of great service to all the rest of us. Can they tell us of a good vacation spot where wives can enjoy the things they desire while the railfan husbands will have the chance to see some good railroading?

Perhaps there is a mountain resort that offers a great main line. Perhaps there is a spot on the seashore that offers both a nice beach and a swell main line. Perhaps there is a spot on the Great Lakes where both husbands and wives can enjoy themselves.

Could TRAINS undertake a survey this winter which would list such vacation spots? Such a survey, printed next April or May, would serve as a guide in planning hundreds, and perhaps thousands, of vacation trips next summer.

Frank E. Shaffer.

Program Director, WKNA
804 Kanawha Blvd., Charleston, W. Va.

[An excellent idea, Mr. Shaffer, but let's not confine it to next April or May; let's begin right now, for every time of the year is vacation time. Contributors may address their letters to Vacations Editor, TRAINS, 1027 N. 7th St., Milwaukee 3, Wis. Please list all attractions, both railroad and otherwise.—*Ed.*]

Monon engines on the P&S

Four Monon engines have turned up on the Pittsburg & Shawmut: 570, 574, 575 and 577. No. 577 has already been overhauled and by the time you get this should be in service between Kittaning and Brockway.

C. L. Collom.

491 Walnut St., Meadville, Pa.

More missing engines

Harrisburg, Pa., has a railroad mystery such as the one at Madison, Wis. The Reading's timetable shows six trains arriving at Harrisburg every day but only five leaving. No. 149, an early morning local, apparently never goes back.

William C. Wagner.

19 N. Nice St., Frackville, Pa.

Missouri River Eagle

The Missouri Pacific has more than one *Eagle;* the train shown on page 39, September TRAINS, is the *Missouri River Eagle.* This line never was part of the Iron Mountain; the IM line runs south from St. Louis.

R. W. Gish.

2 Silver Lane, Kirkwood 22, Mo.

Sorry, Mr. Hulihan

The dispatcher pictured on pages 18 and 19 of September TRAINS is not W. R. Davis. It is:

James L. Hulihan.

General Delivery, Las Vegas, Nev.

County without a railroad

Ohio has 8482 miles of railroads and ranks sixth in the United States in railroad mileage, yet Monroe County has no railroads serving it.

A. S. Eaton.

509 Terminal Tower Bldg., Cleveland 13, O.

[The A. A. R. gives Ohio's railroad mileage as 8417 at the beginning of 1946.—*Ed.*]

This changing world

In your caption for the picture on page 12, August issue, you say that the Frisco is now operating the *Texas Flash* [in place of the *Firefly*]. Until recently this was true, but the Frisco has discontinued the *Texas Flash* and is again operating the *Firefly* to Oklahoma City from Kansas City via Tulsa.

Larry Pakula.

5225 Charlotte, Kansas City 4, Mo.

City with a depot outside the city

Referring to page 67, August TRAINS, "Cities without a depot":

Lakewood, O. ----------69,160

Please see Nickel Plate Road timetable; you will find the first station stop west of Cleveland listed as follows:

Rocky River (Lakewood)

All NKP trains stop there and the depot is located just west over the Lakewood city limits.

Do you think Lakewood is a depotless city if it is advertised on a timetable?

Walter Falkenthal.

13396 Grannis Rd., Garfield Heights 5, O.

"Advertising wouldn't do any harm"

William Wyer, chief executive officer of the Jersey Central Lines, recently said that he thought the railroads could no longer bear the cost of suburban transportation, and that the Jersey Central would like to attract commuters from communities 40 or more miles away from the metropolitan area while surrendering the short-haul passengers to bus lines. There is little doubt that some trains must go. However, if some are operated for the mail and express business, why not try to fill the coaches by selling special tickets to such potential passengers as the weekly shopper to the city? It may be surprising what a diesel railcar could do. Advertising wouldn't do any harm. I think that many a potential train passenger is standing up in a crowded bus.

William Betts.

24 Molter Pl., Bloomfield, N. J.

Village of excellent rail service

Very few cities of any size in the country can furnish through cars to the extent that Crestline, O., can. This little village of less than 2000 population has NYC through cars for Cincinnati, Atlanta, Jacksonville, Miami, Roanoke, Norfolk, Huntington, Charleston, Indianapolis, St. Louis, and other local points. Eastward it has through service to Cleveland, Buffalo, upper New York State towns, Boston, and New York. The Pennsylvania gives through service to Denver, San Francisco, Los Angeles, Kansas City, El Paso, Tucson, Phoenix, Chicago, Omaha, and Salt Lake City. Eastward it gives through service to Pittsburgh, Washington, Baltimore, Philadelphia, and New York. What town in the U. S. can match this from the same station platform?

Frederick A. Exline.

22 E. Gay St., Columbus 15, O.

Susquehanna not all-diesel

In the July issue of TRAINS John W. Barriger states that by fall the Monon hopes to be the first all-diesel class 1 railroad in the United States. . . . In the August 1945 issue of TRAINS there is a statement that in June of 1945 the New York, Susquehanna & Western was the first class 1 road to be all-dieselized. Now who or which is correct?

Wilson Jones.

5014 N. Ashland Ave., Chicago 40, Ill.

[The Susquehanna was the first class 1 railroad to be "internal-combustionized." It has six motor rail cars which are operated with spark plug ignition that are not technically diesels. The Monon, on the other hand, expects to be 100 per cent diesel technically as well as generally speaking. — *Ed.*]

Black Canyon of the Gunnison

I have just returned from the best vacation I have ever had. I preached two Sundays in Denver and two in Telluride, and believe me I covered Colorado in between. . . . I was lucky enough to hit a [D&RGW narrow-gauge] special for Cimarron which took me through the Black Canyon of the Gunnison. That 14 miles of canyon is really something. The brakie said the Royal Gorge can't begin to compare with it, and I am inclined to agree with him. On my way home I went through the Royal Gorge and while the one spot where they stop with the hanging bridge just ahead and the bridge over the gorge high above is mighty spectacular, that is about the only spot that is. But Black Canyon has at least 10 miles of thrills. Notices are up telling of the Rio Grande's petition to abandon the road from Sapinero to Cedar Creek, which is just the portion that is most spectacular.

The Rev. David B. Russell.

1541 Randolph Rd., Schenectady 8, N. Y.

Young railroad capitalist

When I was born my father was working for the Pennsylvania Railroad, and on the day of my birth he bought a couple of shares of stock in my name. Thus I have been a railroader since the tender age of about 12 hours. . . . My hobby is collecting timetables and route maps, and I would appreciate it if others would send me general timetables of railroads in their areas — especially far western lines and all small lines, which are very hard to get.

Ira D. Rathberg.

158 Atlantic Ave., Lynbrook, N. Y.

Named express car

Now I've seen everything. Yesterday I saw a PRR Railway Express car, No. 6056, named *Benjamin Franklin*. I never knew before that any express cars bore names.

J. C. Stansel.

328 Johnston Ave., Trenton 9, N. J.

A railfan looks at R. R. Young

Some railfans were discussing Robert R. Young and his accomplishments.

"Can a revenue passenger do as well as a pig?" asked one, referring to the effective cartoon in a Chesapeake & Ohio advertisement over a year ago. He was inquiring about coast-to-coast passenger car service.

An ardent reader of the *Official Guide* replied. "There are some sleeping cars now operating from coast to coast," he said. "Quite a variety of routings can be had. However, everyone seems to demand space in the one through sleeper in the train. Unfortunately, the traveler who isn't starting from New York or Washington is usually no better off than before. If a Buffalonian were assigned a through berth, for instance, it would be almost impossible to sell that space from New York to Buffalo, and the road would lose the 442-mile haul.

"Through coach service from coast to coast hasn't been realized yet. Apparently 56 passengers at roughly 2½ cents a mile don't look as good to financial departments as 24 passengers at 3½ cents a mile. Strange, isn't it?

"The Texas-Oklahoma situation is much better. The Pennsylvania even boasts through *trains!* New York Central and B&O cooperate in through-car movements; the *Southwestern Limited* even has a through coach. Texas roads are pretty well represented. And here the C&O system gives its one through service: Washington to Texas, with the Big Four filling in the gap from Cincinnati to St. Louis. Big Four has handled C&O sleepers within eastern limits for years."

The chairman of the meeting snapped, "It's funny the Young roads aren't in on this except for one car. Stir up trouble, then almost sneak out the door. Chesapeake doesn't even bother taking passengers into Chicago — transfers them to the South Shore at Hammond, Ind. . . . Young talks, and others act."

Someone in the rear of the room joined the discussion. "How about new trains and new cars? The poor old New York Central, which Young accused of needing new management, had more postwar coaches rolling than any other road for a while. The Chessie hasn't one, except for the *Pere Marquette* streamliners between Grand Rapids and Detroit. The old cars are very good, but they date from Van Sweringen days."

Another man spoke up. "The Chessie was going to give us a nice new daylight train from Washington to Cincinnati. There is such a new train, all right, but it runs on the B&O. You still have to ride overnight if you use Young's road."

A conciliatory voice arose. "C&O gambled on something big and glorious. The other roads were satisfied with the best of the tried and true, and beat the C&O by months and months."

"Sometimes Young acts downright unreasonable," said another. "Take the credit cards he proposed. Seems as if almost every railroad except his has its name on the regular cards. Have to have a different card for his."

The timetable specialist intervened. "And it really is a different card — it is a real one, and a comprehensive one. Send to C&O and you'll get a card, most likely. Send to the agency for the other roads, and unless you're a commercial traveler you probably won't get one. . . . Sometimes it seems to me as if the other railroads try to steal a march on Young by adopting all his ideas in a limited way — not giving them an honest chance. When the halfway measures fail, the public will think the ideas were not good in the first place."

"How is the Young empire toward fans?" a youth asked.

"Nothing startling, either way," came a reply. "If you want to take pictures, I guess you won't be run off the property. On the other hand, don't expect a yard bull to come up with a cold bottle of beer for you."

"I'll give Young credit for one thing," said the chairman. "That's his low-cost excursions for picked boys' groups, from Michigan to Virginia. He's teaching railroads to an age group that cut its teeth on the automobile door handle and was weaned on aircraft fuel. If only the other railroads would do things of that sort! Why, the majority of draftees entering Fort Sill, according to one survey, had never been on a train in their lives!"

"He stopped tipping," chimed in a fan.

"I'm not 100 per cent sold on that action," said another. "It has its merits; I don't like to shell out a quarter any more than the next fellow. But all railroads of any size are run by seniority systems. The average railroad employee

shows about as much initiative and will to serve as a civil servant or a political appointee — and for the same reason. He has nothing to gain or lose. Tips act as an incentive — they make waiters and porters snap to it. Of course, I suppose Young's employees were compensated for the loss in tips — but that'll wear off. I'll have to be shown."

"Yes, there are two sides to that question," said the chairman. "A hotel chain can fire a laggard, but a railroad can't. It may not work.

"But here is another thing about Young which we railroad men do not like: He slams the Association of American Railroads, resigns from it, and then goes on using almost every one of its services. Car records, for instance. It is just as nervy as it would be if he were to resign from his club, and go on eating there, swimming there, getting his mail there — and just paying for services rendered."

A tall, slow-talking man arose. "Before I go home," he said, "let me try to sum up the gist of tonight's discussion. We seem to feel that there are two sides to R. R. Young. He has some good ideas, but no monopoly on them. He has put some of them into effect; he hasn't been able to introduce them all very effectively. Other railroads have borrowed some of his ideas, and have been forced to anticipate some future plans of their own. Sometimes their adaptations haven't been true to the originals, but Young can adapt the adaptations in time. He hasn't had time to do everything yet. We don't care who does things to make progress for the railroads — if the ideas are good, they will spread. Young has been a good thing for the railroads, all things considered — either as a performer or as a catalyst.

"I think that covers everything."

William C. Kessel.

3037 E. Federal St., Baltimore 13, Md.

Railroad photography

BY LINN H. WESTCOTT and W. A. AKIN JR.

Cold weather is here again. It brings one of the best seasons for taking pictures of steam railroad equipment. Diesels and interurbans lose much of their glamour when pictured in the bleak winter setting. But just let a little steam leak out of the injector and a lot of it puff out the stack, and you have a grand picture.

Those clear, sparkling days when the sky is blue are by far the best for winter pictures. Use panchromatic film with a G (dense yellow) filter or even with a red filter such as Wratten No. 25. These are both filters that any serious photo-pictorialist should put on his budget. They will make any blue part of a picture come out darker than normal, so white clouds or steam will stand out like big marshmallows.

You'll have to open up the lens at least two stops more than usual to get correct exposure and maintain detail on the black parts of the locomotive. If your lens is not that "fast," a slower shutter speed will achieve the same result. Change from $\frac{1}{100}$ down to $\frac{1}{25}$, etc.

With this type of picture it is a good idea to make sure that the train itself will be well lighted either by direct sun or by bright snow.

Good subjects on cold winter days include yard scenes, water spouts, grade crossings, bridges from a low viewpoint, cliffs, engine fronts heading into the sun, and trains scooting under signal bridges.

All these things are excellent on color film too, but with color it is even more important to have the dark parts of the train in the scene as well lighted as possible. Your Weston, GE, DeJur, or other first-class exposure meter can make all the difference between a dandy shot and wasted film.

If you have your own facilities for making enlargements, why not try this trick some rainy Sunday evening? Take a good steamy engine picture, one where several shades of lighting are found on the sides of the boiler. Put the negative and a piece of ordinary commercial cut film together in a contact printing frame. Make a positive on the film the same way you would ordinarily make a contact print on paper. The exposure should be to very weak light, however.

Develop the film in regular paper developer and fix, wash and dry.

Now put the positive in the enlarger and make an enlargement. The result, more likely than not, will be a beautiful blown-up negative of your locomotive, quite possibly worth framing. If you have some color transparencies, you can put them in the enlarger and save the trouble of making a film positive.

This idea can, of course, be overdone, but variations of it are suitable for Christmas cards, decorative friezes in a hobby room, or salon prints for the next club show.

Commercial cut film shouldn't scare you away. It's not expensive, and you'll find it useful for other purposes. A good way to get the weak light is to stop the enlarger lens way down and raise the head as high as it will go. Put the contact frame face up on the easel and make the exposure. You may waste 25 cents worth of film before you get a good positive on the film. Tough, isn't it? A red safelight can be used if it is far away.

One serious drawback to railroad photography is the scarcity of good quality photofinishing houses. Quality is down with almost all firms that supply prints and enlargements. Pictures come back on relatively soft-contrast paper because it is easier to get an exposure the first time on the printing machine. When a hard, more contrasty paper is used, little or no attempt is made to dodge in the shadow detail on side rods.

We get from readers many pictures made from excellent negatives — perfect exposures, sharp all over, well-framed. But the enlargement may not have a single place where the tones reach a good black. Or it may have veiled cloud detail that would have "made" the picture if the finisher who enlarged it had taken more trouble in printing.

The photofinisher can hardly be blamed. His costs are up so high that quality must give way to mass production if he is to stay in business.

But this is a natural time for someone to start a new type of photofinishing service — someone who will take five or ten minutes to properly dodge and develop a single print — and charge a higher price accordingly, of course. Such a person must be prepared either to refuse customers or to get more help when too much work is on hand to maintain quality. He must make allowances for doing work a second time for fussy customers. There is already enough special work being done to keep more than one high-quality mail-order house in business.

There is another answer to the problem, and an obvious one at that: If you don't like another man's work, do your own. It's really the best way, but definitely time-consuming. We hope to give more hints on doing darkroom work, or perhaps kitchen-sink-until-midnight work, in this column later this season. It's easy, you actually save money, and if you hang on long enough you can do just as good work as the next fellow — and definitely better than the run-of-the-mill commercial finisher.

Did you know many railroad photographers are glad to sell contact prints from their own negatives? Most often the fellow that takes the trouble to make up a mimeographed list is also the fellow with better-quality pictures. The cost per print is usually quite low.

As much as space permits we shall be glad to print, in this column, the names and addresses of photographers who issue mimeographed or printed lists of their own photos, and whether the collection listed is general or in a specialized field. Just send your list to Photo Editor, TRAINS, along with any other information you think we'd like to know.

For a starter I'd like to mention two outfits that have been supplying photos on a businesslike basis. The captions are usually accurate and informative, so you get more than just a picture.

Tecrasilk Photos, 2046 East 14th St., Oakland 6, Calif.

Rail Photo Service, 93 Massachusetts Ave., Boston, Mass.

Here are the addresses of some of the photographers whose pictures appear in this issue of TRAINS:

Thomas O. Acree, 637 N. Wilcox Ave., Hollywood, Calif.

Albert C. Andrews Jr., 500 Turner Ave., Columbia, Mo.

Wayne Brumbaugh, 868 Huntington Ave., Boston, Mass.

Richard J. Cook, 3402 W. 135th St., Cleveland, O.

M. B. Cooke, 122 Veterans Dr., Montgomery, Ala.

John Cooshek, 904 W. 20th Ave., Vancouver, B. C.

Ralph E. Hallock, 871 S. Gaylord, Denver 9, Colo.

Donald G. Hills, 263 Franklin St., Reading, Mass.

John F. Horan, 2090 S. Columbine, Denver 10, Colo.

Peter Josserand, 233 41st St., Sacramento 16, Calif.

Fred H. Ragsdale, Box 475, Big Bear City, Calif.

Robert W. Richardson, 477 E. Market St., Akron 4, O.

Harry J. Trede, 115 Fernwood Terrace, Stewart Manor, L. I., N. Y.

Jack Whitmeyer, 447 Julie St., Colton, Calif.

William Edward White, 6107 Holway St., Oakland 3, Calif.

Railroadiana

Do you collect something in the railroad field? Books, timetables, passes, photos of engines, old spikes, fireboxes or stokers? Perhaps you compile miles and miles of filing cards on some special kind of railroad information. If you do, this is your special corner in TRAINS.

One of our staff members used to collect abandoned railroads. No, he didn't really pick them up and take them home, but he kept maps and card files on every piece of abandoned track he could trace down. This was about 1930 or so, when miles and miles of track was wiped out every year.

The most interesting part of his collection was an atlas in which all abandoned tracks were shown. Those lines seemed to go everywhere. In some places, like northern Pennsylvania or around Cripple Creek, the data was so crowded that the lines formed almost a solid mass of ink.

Many railfans are fascinated by the old abandoned grades in their neighborhoods. The best way we know to find out more about them is to search in old maps and atlases until the name of the road is found. From this lead more information can be gathered from Poor's Manuals, from old copies of the *Official Guide*, and especially from legislative documents and old newspapers.

A little over a decade ago a secondhand book dealer would invariably tell you he had very little material in the railroad field. The few items he did have were usually buried under a thick coating of dust. The prospective buyer would leave the store looking like a coal miner.

How different the picture is today! Almost every large city has at least one secondhand book dealer who keeps a special section devoted to books in the railroad field. Railroadiana now vies with the old romantic standbys, ships, old novels, and books on the Civil War.

We'd like to hear from such dealers and if there are not too many, we'll mention them in this column so every reader can

This size advertising space is now available!

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For particulars, write TRAINS, Milwaukee, Wis.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946

Of Trains, published monthly at Milwaukee, Wis., for October 1, 1947.

State of Wisconsin, County of Milwaukee, ss.

Before me, a notary public in and for the State and county aforesaid, personally appeared A. C. Kalmbach, who, having been duly sworn according to law, deposes and says that he is the Editor and Publisher of the Trains and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily, weekly, semiweekly or triweekly newspaper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the act of August 24, 1912, as amended by the acts of March 3, 1933, and July 2, 1946 (section 537, Postal Laws and Regulations), printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, A. C. Kalmbach, 4821 W. Woodlawn Ct., Milwaukee 13, Wis.; Editor, A. C. Kalmbach, 4821 W. Woodlawn Ct., Milwaukee 13, Wis. Managing editor, None. Business manager, Robert B. Adams, 3820 Lakeside Rd., Pewaukee, Wis.

2. That the owner is: Kalmbach Publishing Co., 1027 N. 7th St., Milwaukee 3, Wis., and that the names and addresses of stockholders owning one per cent or more of total amount of stock are: Roy W. Campbell, 6916 Cedar St., Wauwatosa 13, Wis.; A. C. Kalmbach, 4821 W. Woodlawn Ct., Milwaukee 13, Wis.; Henry H. Kirtland, 3820 Lakeside Rd., Pewaukee, Wis.; J. C. O'Hearn, 1609 N. 40th St., Milwaukee 8, Wis.; Glenn E. Parker, 5614 N. 40th St., Milwaukee 9, Wis.; Frank Taylor, 229 N. 73rd St., Milwaukee 13, Wis.; L. H. Westcott, 1362 N. 39th St., Milwaukee 8, Wis.; Lucius M. Beebe, 15 E. 58th St., New York 22, N. Y.; Mrs. B. G. Kalmbach, 4821 W. Woodlawn Ct., Milwaukee 13, Wis.; Mr. and Mrs. M. F. Kalmbach, Caddo Gap, Ark.; Ray J. Mertz, 2455 N. 72nd St., Wauwatosa 13, Wis.; M. D. Thornburgh, 585 Vine St., Chillicothe, O.; Mrs. Regina Westcott, 1362 N. 39th St., Milwaukee, Wis.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is____ (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

A. C. Kalmbach, Editor and Publisher

Sworn to and subscribed before me this 29th day of September, 1947.

Mildred Gallasch, Notary Public

(Seal) (My commission expires Oct. 31, 1948)

THE *Ideal Christmas* GIFT

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browse. Owen Davies is one dealer who has a very large stock of railroad material. Besides books, he has passes, tickets, timetables, periodicals, guides, and maps. When you're in Chicago, drop in at 1702 N. Wells Street and see first hand.

Grahame H. Hardy, 2046 E. 14th Street, Oakland 6, Calif., has the same kind of store on the West Coast. Both Davies and Hardy also keep up a spanking mail-order business, as does Richard Clover from his home in Willow Grove, Pa. If you write any of these fellows, we'd like it if you'd mention TRAINS' new department on Railroadiana.

Trains quiz

The map on page six is a composite of six actual areas in the United States. They are all drawn to a scale of 32 miles to the inch, then turned in various directions and fitted together like a jigsaw puzzle. The railroad routes in most places also follow actual routes in these territories. Can you identify the six territories, the cities numbered 1 to 10, and the approximate limits of the territories? A diagram showing how the artist made up the map will be printed in this column next month.

Railfan clubs

You can add to your enjoyment of railroading if you share your enthusiasm and experiences with others. Many railfan organizations are scattered throughout the country, and others are being organized as interest in railroading spreads.

Railroad clubs offer a variety of interesting opportunities. The larger clubs often have first rate speakers at most meetings along with railroad movies.

In addition to the larger excursions, like those listed on page 63, a great many short informal trips are made to roundhouses, over branch and main lines, to signal towers, yards, shops, and scenic spots where there is good action for the photographer. A few clubs also operate a model railroad. Likewise, in the hundreds of model railroad clubs (they will be listed in THE MODEL RAILROADER magazine, December 1947 issue) there are quite a few fellows who also follow railfan activities.

The bulletins of some of the larger clubs give them a national membership. It is well worth while to join at least one of these along with a local club. Arbitrarily, the "nationals" might include: Railway & Locomotive Historical Society; Electric Railroaders Association; National Railway Historical Society; Railroad Enthusiasts; Central Electrical Railfans' Association.

The following list of clubs is by no means complete. Other club names will be printed in future issues. Club secretaries are invited to send information to Railfan Club Editor, TRAINS, 1027 N. 7th Street, Milwaukee 3, Wis.

[Where meeting dates or meeting places are indefinite, information can be obtained from the person named. Contact him at the address following his name, if given; otherwise, contact can be made at the club's address. Times given are p. m. unless otherwise indicated.]

CALIFORNIA

Berkeley — Bay Area Electric Railroad Association, Hotel Shattuck, Shattuck and Allston Way. First Friday, 8. Addison H. Laflin Jr., Secy., 2119 Marin Ave., Berkeley 7.

Los Angeles — Railway Club of Southern California, P. O. Box 116, Los Angeles 42.

Los Angeles — Railroad Boosters, P. O. Box 5279, Metropolitan Station. First Friday, 8. Elna Sundquist, Secy., 1032 S. Mansfield Ave.

Oakland — California-Nevada Railroad Historical Society, 2045 E. 14th St.

Oakland — California Railfans Association, 719 19th St. Second Saturday, 7:30. Albert N. O'Donnell, Secy.

San Francisco — California Railfans Association. Last Friday, 7:30. Albert N. O'Donnell, Secy., 719 19th St., Oakland 12.

San Francisco — Northern California Railroad Club, SP Depot, 3rd and Townsend. Third Saturday, 8. Francis Guido, Secy., P. O. Box 668, San Mateo.

San Francisco — Railway & Locomotive Historical Society (Pacific Coast Chapter), Marine Engineers' Hall, Ferry Bldg. Fourth Friday, 8. Stanley Merritt, Secy., 836 Alma Ave., Oakland.

COLORADO

Golden — Rocky Mountain Railroad Club, 1701 Washington Ave.

CONNECTICUT

Bridgeport — Electric Railroaders Association (Connecticut Valley Division). Eugene Hermann, 506 Old Stratfield Rd., Bridgeport 5.

New Haven — National Railway Historical Society (Connecticut Valley Chapter), 15 Court St. Saturdays. Roger Borrup, Treas., Warehouse Point.

DISTRICT OF COLUMBIA

Washington — Electric Railroaders Association (Washington Division). C. J. Murphy, 1522 White Pl. N. W., Washington 20.

Washington — National Railway Historical Society (Washington Chapter), Room 1030, Transportation Bldg., 17th and H Sts. N. W. First Thursday, 8. Rudolph Volin, Secy., 1871 Ingleside Ter. N. W., Washington 10.

ILLINOIS

Champaign-Urbana — Illini Railroad Club. Third Tuesday, 7:30. Paul W. Cruikshank, Secy., 909 W. Clark St., Champaign.

Chicago — B&F Railroad Club, Kelvyn Park Field House, 4434 W. Wrightwood Ave. Tuesday, Thursday. Fred Antonelli, Secy., 4434 Altgeld St.

Chicago — Railroad Club of Chicago, Hamilton Hotel, 18 S. Dearborn St. Third Wednesday, 7:30 (consult secy.). C. T. Winkless Jr., Secy., 2255 W. 111th St., Chicago 43.

Chicago — Railway & Locomotive Historical Society (Chicago Chapter), D. W. Yungmeyer, 5116 Dorchester Ave., Chicago 15.

Chicago — Central Electric Railfans' Association, Room 1222, 79 W. Monroe St., Chicago. George Krambles.

INDIANA

South Bend — Railway & Locomotive Historical Society (Northern Indiana Chapter), Room 8, Union Station. Second Tuesday, 7:30. Secretary is Elmer J. Danch, Editor, *Studebaker News*, Studebaker Corp., South Bend 27.

KENTUCKY

Louisville — Louisville Railfans Club, Y. M. C. A., 3rd and Broadway. Friday, 8. John D. Antonides, Secy., 2703 Field Ave., Apt. 1, Louisville 6.

MARYLAND

Baltimore — National Railway Historical Society (Baltimore Chapter), Stafford Hotel, Charles and Madison Sts. Third Wednesday. Robert E. Jannsen, Secy., 2700 Joppa Rd., Baltimore 14.

MASSACHUSETTS

Boston — National Railway Historical Society (Boston Chapter), Boston Elevated meeting room, 24 Faulkner St., Fields Corner. H. B. Brainerd, Pres., 10 Upland Rd., Wellesley 81.

Boston — Railroad Enthusiasts. Ralph J. Alvarez, Secy., 55 Cherry St., Waltham 54.

Somerville — New England Electric Railway Historical Society, 10 Spring Hill Ter. Has museum at Kennebunk Port, Me.; owns Seashore Electric Railway. John E. Amlaw, Treas.

MICHIGAN

Jackson — Central Michigan Model Railroad Club, 909 S. West Ave. Thursday, 7. Belding H. McCurdy, Secy.

MISSOURI

St. Louis — Electric Railroaders Association (St. Louis Division). Donald Engel, 446 2nd Ave., North Pelham, N. Y.

NEVADA

Reno — California Railfans Association. Thursday, 7:30. Albert N. O'Donnell, Secy., 719 19th St., Oakland 12, Calif.

NEW JERSEY

Camden — National Railway Historical Society (West Jersey Chapter), 639 Clinton St. Friday. E. L. Pardee, Dir., 626 Park Ave., Collingswood.

Jersey City — National Railway Historical Society (North Jersey Chapter), CNJ conference room. Second Thursday. Wilbur E. Wyckoff, Secy., 157 Watchung Ave., North Plainfield.

NEW YORK

Albany — Capital District Railroad Club, 24 Benson St. First Thursday, 8:15. James M. Slattery, Secy.

Brooklyn — National Railway Historical Society (Brooklyn Chapter). First Friday. William P. Hamilton III, Pres., 76 Remsen St.

Buffalo — National Railway Historical Society (Buffalo Chapter). First and third Fridays. Roy A. Cross, Cor. Secy., 123 W. Girard Blvd., Kenmore 17.

New York — Electric Railroaders Association (New York Division). Third Friday. Paul Renault, 39 Vermont St., Long Beach.

New York — National Railway Historical Society (New York Chapter), Y. M. C. A., Pennsylvania Station. Second Wednesday, 7:45. Jeffrey Winslow, Secy., 2905 Grand Concourse, Bronx 58.

New York — Railroad Enthusiasts, Room 5928, Grand Central Terminal. Fourth Wednesday.

Rochester — National Railway Historical Society (Rochester Chapter), 155 W. Main St. First and third Thursdays. Ward C. Shafer, Secy., 26 Modelane, Rochester 11.

Syracuse — National Railway Historical Society (Syracuse Chapter), Railroad Y. M. C. A., East Syracuse. First Wednesday, 7:45. Robert O. Waters, Secy., R. F. D., Fayetteville.

OHIO

Akron — Akron Railroad Club, Y. M. C. A., Bowery and State Sts. Fourth Thursday, 8. Robert W. Richardson, Secy., 477 E. Market St., Akron 4.

Canton — National Railway Historical Society (Midwest Chapter). First Saturday. Norman Klabuhn, Secy., 1526 Frazier Ave., N. W., Canton 3.

Cincinnati — Cincinnati Railroad Club, Williams Y. M. C. A., 1228 E. McMillan St. First Thursday, 8. Ralph H. Payne, Secy., R. 7, Box 194-D, Ebenezer Rd., Cincinnati 11.

Cleveland — Cleveland Railfans Association. F. P. Kellogg, 1981 E. 105th St.

Cleveland — Electric Railroaders Association (Cleveland Division). Donald Engel, 446 2nd Ave., North Pelham, N. Y.

Dayton — Electric Railroaders Association (Dayton Division). Donald Engel, 446 2nd Ave., North Pelham, N. Y.

Toledo — Toledo Railfans Association, Toledo Terminal Railroad Bldg. First Friday, 8. Gustave Erhardt, Secy., 1343 Dawson St.

PENNSYLVANIA

Allentown — National Railway Historical Society (Lehigh Valley Chapter), 3rd floor, Y. M. C. A., 7th and Hamilton Sts. Second Wednesday, 7:30. Randolph L. Kulp, Secy., 602 St. John St.

Harrisburg — National Railway Historical Society (Harrisburg Chapter). Paul G. Keller, Dir., 855 Market St., Lemoyne.

Lancaster — National Railway Historical Society (Lancaster Chapter). Walter Knapp Jr., Dir., 49 Kreider Ave., R. 3.

Philadelphia — Electric Railroaders Association (Quaker Division). Edward P. Haines, 110 E. Durham St., Mount Airy.

Philadelphia — National Railway Historical Society (Philadelphia Chapter), B&O Station, 24th and Chestnut Sts. First Tuesday and third Thursday. Harry S. Myers, Secy., 5005 N. Sydenham St., Philadelphia 41.

Pittsburgh — National Railway Historical Society (Pittsburgh Chapter). First Wednesday. Lazaer Israel, Secy., 6606 Dalzell Pl., Pittsburgh 17.

Reading — National Railway Historical Society (Reading Chapter), Y. M. C. A., 6th and Oley Sts. Third Sunday, 2. H. M. Knauer, Dir., 1025 Greenwich St.

Southampton — Penn-Jersey Railroad Club. Third Tuesday, 8. J. Paul Probst, Secy., 161 N. Bellevue Ave., Langhorne.

RHODE ISLAND

Providence — National Railway Historical Society (Southern New England Chapter). Second Monday. Lewis C. Wilcox, Secy., 44 Arnold Ave., Edgewood Station.

WISCONSIN

Milwaukee — Railroad Society of Milwaukee, 3rd floor, 302 W. Highland Ave. Third Friday, 8. Richard I. Nation, Secy.

CANADA

Toronto, Ont. — Upper Canada Railway Society. J. R. Oakley, 147 Brookdale Ave.

Second section

You're in for a few surprises with this month's TRAINS. For instance, "Running Extra" isn't what it used to be. That column is now combined with "Second Section," and the *new* "Running Extra" is devoted to a listing of fan trips. The name fits well, doesn't it?

A brand-new department will be found under the heading "Interchange." "Railway Post Office" has been made more flexible so that more space is available when necessary. We have had to omit many interesting letters in the past just because there was no place to put them. That won't happen again.

We think you'll enjoy the new TRAINS. We will continue to welcome your suggestions, as we have in the past; TRAINS is *your* magazine, and we want it to please *you*.

●

J. Kenneth Jerome (that first J stands for Jerome too) is supervisor of shipping on the sixth floor at 1027 N. 7th Street, Milwaukee. That means he's the man who oversees the handling of your orders for Kalmbach Publishing Co. books, back issues of TRAINS, and sundry items. He's

KEN JEROME

in charge of the electric postage meter machine which can (but doesn't) lick, seal and stamp 10,000 letter-size envelopes an hour. The electric machine recently replaced the hand-powered machine shown with Ken in the photograph. It uses up about $800 worth of postage a month. That's in addition to freight and express charges; only the smaller shipments are made by mail. Second-class postage is also additional, as it is paid on a bulk pound rate.

Another electric machine which helps Ken and his two assistants is a scale which lights up like a butcher's scale and automatically computes the postage necessary to carry a package anywhere in the country. After the amount of postage is known, Ken moves a few keys on the postage meter, pushes a button, and out rolls a moistened gummed tape with the correct amount of postage printed on it. Some difference from the old days when Howie Little used to use up the company's odd half-cent stamps by sticking scores of them all over the sides of a package!

Right now Ken's entering the rush season, and already he's forgotten that his basic week consists of 37½ hours. Yet he manages to find time to indulge in his favorite pastimes — reading, and listening to good music — as well as to take up an evening course in production planning and control. He's 26, married, and has one child. He's been with the company two years, and before that he spent 4½ years in the South Pacific doing you-know-what.

●

One of the advantages of being an editor of TRAINS is that you get to read much more railroad material than appears in the magazine. It's obvious that TRAINS receives much more material than it prints, and the manuscripts that are rejected sometimes afford as good reading as the ones that are accepted. But because they're on some subject which would not be of general interest, there is no place for them in TRAINS, which must balance its content to please most of the readers most of the time.

●

The annual index for Volume 7 is included with all subscribers' copies of this issue. Other readers may have the index free for the asking; just drop us a post card.

Of books and trains

The American scene in railroading

BY FRANK P. DONOVAN JR.

Like a lapidary in a jewelry store or an art connoisseur in a gallery of paintings, I pick up *Mixed Train Daily: a Book of Short-Line Railroads* by Lucius Beebe, with photos by the author and C. M. Clegg Jr. Is it genuine? Twelve seventy-five is a lot of money, but *Mixed Train Daily* is a lot of book, to say nothing of photographs, paintings and maps. It *is* unique, and I use the word advisedly. In all railroadiana there is nothing else like it. Until the Guggenheim Foundation or some other endowment fund sees fit to subsidize a gifted writer to ride a couple of hundred short lines — and this is most unlikely — Beebe and Clegg need fear no competition.

This volume is a comprehensive and balanced portrayal of short lines in every large area of the United States. From the 1-mile Augusta Railroad to the long narrow-gauge branches of the Denver & Rio Grande Western, from Maine to California, and from Washington to Florida, they are here in picture and text. Never before between two covers has there been such a photographic display of Tom Thumb railroads so attractive, so skillfully done, so free and easy on the eyes. There are pictures of typical short lines and many that are atypical, yet virtually all are of workaday operations, genuine, realistic, natural. Six paintings by Howard Fogg add still more color to an already colorful book.

It is indeed an item for the American record, a picture of small-time railroading told in "the grand manner." The authors fortunately tackled the job when the sun is beginning to set on the quaint and lovable ways of short-line railroading. They have captured the romance of Pintsch lamps, open-end passenger cars, covered bridges, graceful high-stepping Americans and low-slung utilitarian Moguls in their penultimate years.

Beebe's method of narrating is as varied and informal as the mixed train and way freight. There is a chapter on the cabbage stacks, another on Georgian short lines, a slow-moving section on Arkansas' little roads, and a couple of other selections recounting the glories of slim-gauge pikes in Colorado and California. Toward the end of the book are delightful chapters of "less than carload lots" on class 2 and 3 carriers hither and yon in the U.S.A. A glossary of rail slang rounds out the volume.

The book in itself is a picture of Beebe in transition. Remember way back in '38 when he wrote *High Iron*? In its 226 pages of mostly heavy railroading there is hardly a mention of short lines and scarcely a photo of them. Then in 1940 came *Highliners*, a similar book which condescendingly had a few pictures of the little roads. Came 1941 and *Trains in Transition* — and a handful of short-line illustrations. Finally in 1945 Beebe unblushingly devoted a full chapter and many photographs to the little roads in *Highball*. And now his biggest book, 368 imperial octavo pages (8½" x 11¼"), is about the littlest of railroads. Truly the meek shall inherit the railroad world, at least in the field of letters.

Mixed Train Daily shows considerable improvement over the earlier volumes in Beebe's picture parade of American railroading. The photos are more varied and are taken from different angles and positions. The maps by Linn Westcott, too, are of great aid. The many short lines in Georgia easily become geographical entities upon glancing at the map. But oh for a sketch showing the routes of Arkansas' slow trains over its innumerable short lines! Probably the greatest improvement is the index of pictures and text.

Despite the fine over-all picture, there are a few minor deficiencies. Occasionally one gets tangled up in Beebe's long and involved sentences, for he does not always have the simplicity of thought and clarity of expression found in Archie Robertson's *Slow Train to Yesterday*. Beebe also ascribes both the Rock Island and the Northern Pacific as having only one connecting short line each. As a matter of fact, the former has approximately 40 (excluding switching and terminal properties) and the latter at least half that number. To pick out petty flaws, however, does gross injustice to the job at hand — that of portraying the short line to the American public. All and all it is a grand book and a tip-top item of Americana.

A quite different volume, yet one essentially of work and ways of yesteryear, is John T. Winterich's *Another Day, Another Dollar*. The author, a very practical man — and not without a sense of humor — dedicates his book "to the Providence Gas Company." Why? Well, let Winterich put it in his own words: "If it had not been for the Providence Gas Company, I could not have had a college education." Maybe his job as meter reader seems drab to most of us, but not to John T. Winterich. In this book he tells, in an almost Kiplingesque manner, about the many jobs he held. We see him as a delivery boy at "$52 per annum," as census taker at 2½ cents a head, and as conductor on an open trolley. He liked all his jobs, but none more than conductoring from the running board of an eight-bench four-wheeler.

In the three chapters on his street railway "career" ("Two Bells and Away We Go," "A Special Kind of Insult," and to a degree in "The Redemption of Pegleg Champlin"), we have open trolleying at its best. Who among middle-aged city folk has not enjoyed riding the front platform of a bounding single-truck open car? And was not the last bench on the owl car a first-rate place for "sparking"

in the pre-automotive era? Winterich has captured the thrill of open trolleying and preserved it for posterity.

There is something very wholesome and democratic about trolleys, particularly the open cars, which has seldom been brought out. To quote Winterich:

> "'Tisn't exactly what it looks like from the sidewalk," an old conductor philosophized after I had been a conductor myself long enough to agree with him. But even after making all due allowance for the insider's vantage-point, street railroading was a mundane, shoulder-rubbing enterprise. It was of the people, by the people, and — despite the oft-repeated, ever-repetitive communications to the press of Only a Passenger — for the people. Apart from some of the lordly suburbans and interurbans, it did not enjoy its own right of way. It lacked the eclecticism and hoity-toityness of the steam railroad. . . . Passengers and crew could and did pass leisurely time of day with pedestrian friends and acquaintances; the conductor was in continual and essential contact with his fares; the attainment of a front seat on an open car involved utterest proximity to the motorman — one was enjoined, to be sure, from talking to him, but he himself was likely to assume full responsibility for this breach of regulations by opening the conversation.

The open trolley is gone; but if you want to take a memory trip back to Providence, R. I., and capture the gusto of riding the old "bloomer" cars, Winterich is your man. The fare? Two-fifty, and good for unlimited riding. Step right up and on the car!

So much for the American scene. Now let us turn to England in the early railway era. A first-rate story of pioneer rail construction, operation and development can be found in *Dandy Hart*, a thumping long novel by Hamilton Ellis. Its hero, Leander Hart, brushes aside his genteel upbringing to become an engine cleaner on the old London, Brighton & Scottish Railway. Eventually he becomes a minor executive in that company and finally, after a stormy career, ends up as first engineer on a ship.

The novel covers the period from 1832 to 1863. It starts with stagecoaches and terminates with the mastery of the Iron Horse in land transportation. In it are such notable figures as I. K. Brunel and Daniel Gooch amid a backdrop of rail development which is historically accurate. Unlike most fiction writers who have turned their pens to railroading, Hamilton is a keen student of the industry; and all his stories have a genuine ring of one who knows his subject thoroughly. Incidentally, this is Hamilton Ellis' fifth rail novel.

Now we come to a group of specialized works: books on accounting, traffic, rates, and local history. First on the list is *Analysis of Railroad Operations* by O. D. T.'s executive officer Joseph L. White. Many a railroad official will remember White's first edition of this valuable interpretation of the accounting classification established for the roads by the Interstate Commerce Commission. This second edition is considerably enlarged and expanded to cover modern methods and practices. It has many charts, tables, schedules and photographs which illustrate various phases of rail operation. Security analysts, accountants and executives will find the volume of interest and help.

In the traffic field Dr. G. Lloyd Wilson, of the University of Pennsylvania, is a recognized authority. His latest book, *Interstate Commerce and Traffic Law*, is both scholarly and practical. The volume states the provisions of the Interstate Commerce Act pertaining to each phase of traffic management, and cites significant decisions of the courts in regard to the rights and duties of shippers and carriers. It brings out the important phases of each decision with cross references to similar and related cases. Almost anyone dealing with transportation problems of car supply, rates, services and claims will welcome this work.

Another professor well known in the field of railway economics discusses transcontinental rates. The prof is University of California's Stuart Daggett, who writes in conjunction with John P. Carter; the book is *Structure of Transcontinental Railroad Rates*. The authors have no ax to grind but seek to present an impartial study of rate structures as applied to the exchange of goods between California and the eastern states. A mile is a mile the world over, yet freight rates do not always reflect this fact. Middle-distance hauls in the West cost more than those in the East; short hauls in the West cost less. Rates on goods from West to East do not necessarily correspond with tariffs on the same commodities going from East to West. The authors explain why this is so.

To give an over-all picture of transcontinental freight tariffs, the authors discuss such factors as the physical characteristics of the roads and the complex mechanism of rate making. Pages are devoted to terminal rates, rate groupings and profiles, and the levels of class and commodity transcontinental rates. Many charts, maps and graphs help the reader to understand the complex and inter-related matter of rates and traffic.

Charles E. Fisher's historical study entitled *Whistler's Railroad* is a carefully documented little volume on the origin, construction and development of the Western Railway of Massachusetts. Considerable attention is given to the early motive power and details of operation, including the vexing problem of rate making. The division of rates between the Western and its eastern connection, the Boston & Worcester, was always a sore point. No satisfactory agreement was ever reached until both roads consolidated to form the present Boston & Albany. Short biographical sketches of George Washington Whistler (father of James Abbott McNeill Whistler, the famous painter), George Bliss, and Chester Williams Champin are included. The volume contains many rare and interesting photographs together with a map and profile of the 150-mile road.

Analysis of Railroad Operations, by Joseph L. White. 306 pp., 6½" x 9½". $5. Simmons-Boardman Publishing Co., 30 Church St., New York 7, N. Y.

Another Day, Another Dollar, by John T. Winterich. 204 pp., 5½" x 8¼". $2.50. J. B. Lippincott Co., Philadelphia 5, Pa.

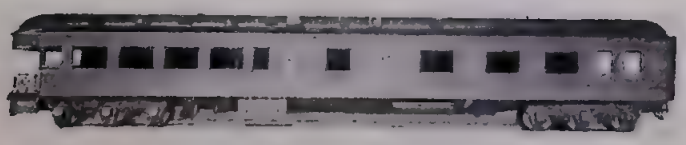
Dandy Hart, by Hamilton Ellis. 466 pp., 5" x 7½". 12 shillings 6 pence. Victor Gollancz, Ltd., 14 Henrietta St., Covent Garden, London W. C. 2, England.

Interstate Commerce and Traffic Law, by G. Lloyd Wilson. 677 pp., 5¾" x 8¼". $7.35. Prentice-Hall, Inc., 70 Fifth Ave., New York, N. Y.

Mixed Train Daily, by Lucius Beebe, with photographs by C. M. Clegg Jr. and the author, and six paintings by Howard Fogg. 368 pp., 8½" x 11¼". $12.75. E. P. Dutton & Co., 300 Fourth Ave., New York 10, N. Y.

The Structure of Transcontinental Railroad Rates, by Stuart Daggett and John P. Carter. 165 pp., 6¼" x 9½". $4. University of California Press, Berkeley, Calif.

Whistler's Railroad, by Charles E. Fisher. 103 pp., 6" x 9", bound in paper. $1 to members; $2 to non-members. Railway & Locomotive Historical Society, Inc., Baker Library, Harvard Business School, Boston, Mass.



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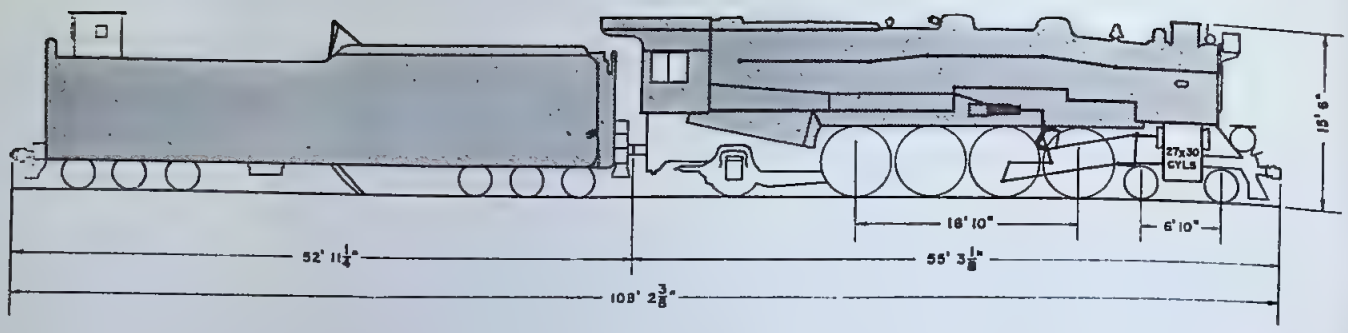

Principal dimensions of PRR M-1, M-1a and M-1b freight locomotives

Road numbers	6699-6999
Built by PRR, Baldwin and Lima	1923-1930
Cylinders, diameter and stroke, inches	27 x 30
Diameter of drivers, inches	72
Tractive power, pounds	64,550
Boiler pressure, pounds per square inch	250
Total weight of engine, pounds	390,000
Weight on drivers, pounds	271,000
Weight on leading truck, pounds	59,000
Weight on trailing truck, pounds	60,000
Weight of engine and tender, pounds	768,360
Grate area, square feet	69.86
Evaporative heating surface, square feet	4698
Superheater heating surface, square feet	1634
Tender capacity: Tons of coal	31.5
Gallons of water	22,090

The numbering of the M-type locomotives is rather confusing. Road numbers 6699 and 6800 to 6999, inclusive, are assigned to M-1 locomotives; 6700 to 6799, to M-1a locomotives, except for numbers 6700, 6713, 6732, 6733, 6744, 6751, 6755, 6762, 6776, 6780, 6783, 6787, 6794, 6795, 6796 and 6799, which are all listed as class M-1b locomotives on the PRR roster.

Pennsylvania Railroad westbound merchandiser at Delphos

Photo on page 61.

Delphos, O., is a watering stop for locomotives of the Pennsylvania Railroad, 14 miles west of Lima on the Pittsburgh-Chicago main line. Engine 6848, hauling a westbound merchandise train, prepares to stop for water as it nears Delphos, and the fireman has already climbed to the top of the huge tender, ready to swing the spout into position. No. 6848 is a class M-1 Mountain (4-8-2) locomotive. Its principal dimensions are given above.

Richard J. Cook.

Interchange

Robert W. Richardson ↑ rode more than 100 mixed trains before he wrote his story on page 40. He is 37 and from Akron. His hobbies include RPO cancellations, tickets, passes, and railroad pictures. Bob is secretary of the Akron Railroad Club. For relaxation, however, he'll take sailing.

San Francisco may lose its cable cars (page 8) in the very near future; the decision will be made in a referendum election November 4. A sample of the hot battle being waged by the Citizens' Committee to Save the Cable Cars is this excerpt from a letter by "Groover," addressed to Mayor Roger D. Lapham and printed in the *Daily Pacific Builder:*

"You say the cable cars must go. How right you are. . . . Now let's be realistic about our parks. It costs uncounted thousands of dollars to maintain these parks, and they do not yield one dime revenue. . . . Let's subdivide Golden Gate Park into 25-foot building lots. . . . Think of the revenue. . . . Seriously, can't we save at least *one* of our "romantic institutions"? . . .

There is much material on cable cars that is interesting to browse through. Many publications are now out of print but can be seen in libraries or perhaps through dealers in secondhand railroad books. Leaders in the field include *Cable Car Days in San Francisco* by Edgar M. Kahn, Stanford University Press, Stanford University, Calif., and the booklet *Anatomy of the San Francisco Cable Car* by Frank Parker, published privately by James Ladd Delkin at Stanford.

Kahn gets all the flavor of old San Francisco into his pages along with the historic battles the early cable car men had to win. A number of old photos are reproduced along with quaint sketches by William Wilke. For those who wish to study further, a number of sources are named in the references section and in the preface.

Parker's booklet is a delightful combination of illustrations showing how every part of the cable railroad works and how it is operated. Sixteen full-page photographs by Frederick Lyon wind up the book. These are of salon quality and they depict better than words the action and atmosphere of the Nob Hill expresses as they are operated today.

Fares Please!, a book about street railways, subways and buses of all kinds, devotes chapter 3 to cable cars. It is published by D. Appleton Century, New York, and the author is John A. Miller.

You will be lucky to get a copy of *Cable or Rope Traction as Applied to the Working of Street and Other Railways* by J. Bucknall Smith. It was published in London in 1887. Its chapters on cable street railways in the United States include drawings, profiles, and maps.

Firsthand research can still offer much to the diligent cable fanatic. Undoubtedly files of old cable car companies are still preserved in some cities. Photographs can still be taken of enginehouses and old trackwork. Professional photographers may still have their original glass negatives of scenes when the cable car was the fastest way to get to the dry goods emporium.

Norfolk & Western (page 13) started construction on an extension of its electrification from Iaeger to Williamson in the middle twenties. Had the project been completed, the total electrified mileage of the road would have been around 100 miles.

Train trek

One-day circle trip

Chicago-Manitowoc-Neenah-Chicago, 395 miles, $9.71.

For an interesting Sunday circle trip in the midwestern area, board the Chicago & North Western's streamlined *"400"* at the North Western station in Chicago at 8 a. m. Ride through lakeshore communities as far as Manitowoc, Wis., where the *"400"* glides to a stop at 11:24 a. m. Take a bus or taxi to the Soo Line station in Manitowoc, 1.6 miles from the C&NW station.

You're in for an interesting time as you wait for your next train—a Soo mixed which leaves Manitowoc at 12:30 p. m. The Soo ferry slip, yards, and engine facilities are near the station, and your train will pick up some freight cars from the car ferry after it docks. You and any other passengers will ride in the caboose.

Your mixed train will take you into Neenah, Wis., at 3 p. m. if it's on time; at any rate, being Sunday, you can usually bank on it to make connections with southbound Soo train No. 2 at Neenah. If you should fail to make connections you will not be stranded; just walk a mile to the Neenah-Menasha station of the C&NW and take the Sunday-only train for Chicago at 6:09 p. m.

But by all means take Soo No. 2 if you can make it. It leaves Neenah at 3:45 p. m. About an hour later it will pass the North Fond du Lac shops of the Soo, where you can usually see locomotives ranging from Consolidations to 4-8-2's and 4-8-4's, and a diesel switcher making up a train. The yards and shops are west of the tracks, so sit on the right side of the car if you can. No. 2 carries a "snack car" where you can get light meals and sandwiches. If the train is a bit late out of Fond du Lac, you may find yourself sitting on a siding for a freight a little south of that point. No. 2 is scheduled to arrive in Chicago at 9:50 p. m.

Condensed schedule of trip:

Lv Chicago, C&NW *"400"* (Sunday only)	8:00 a. m.
Ar Manitowoc	11:24 a. m.
Lv Manitowoc, Soo No. 401, mixed	12:30 p. m.
Ar Neenah	3:00 p. m.
Lv Neenah, Soo No. 2	3:45 p. m.
Ar Chicago	9:50 p. m.

Check latest timetables for changes.

Running extra

November 23: Carriso Gorge circle trip, AT&SF from Los Angeles to San Diego, SD&AE from San Diego to Niland, SP from Niland to Los Angeles. Leave Los Angeles 7 a. m., San Diego 11:15 a. m. Scheduled return to Los Angeles at 1 a. m. November 24. See Salton Sea, 260 feet below sea level; cement railroad in desert; spectacular Carriso Gorge trackage. Boarded baggage car; diners serving lunch and dinner; lounge; air-conditioned reclining-chair cars. Fare, cash before November 18, $13.50; half fare, $8. After November 18, $15; half fare, $8. No reservations after November 18. Make checks payable to Railroad Boosters; make reservations with Cook Reeves, Box 5279, Metropolitan Station, Los Angeles 55, Calif.

December 27-28: Carriso Gorge holiday, Excursion 6 of the Railway Club of Southern California. Leave Los Angeles via SP at 12:30 p. m. December 27, as Second 2, the *Sunset Limited*. Stops to be made at Pomona, Colton, Beaumont, and Indio. Train will stop overnight at Yuma, Ariz., leaving at 6 a. m. December 28 via Inter-California Railway to Mexicali, Mexico, then to El Centro, Calif. From El Centro to Lindero via San Diego & Arizona Eastern through Carriso Gorge; Lindero to Tiajuana via the Tiajuana & Tecate to National City and San Diego. Return to Los Angeles via Santa Fe, arriving at 10 p. m. December 28. Fares: coach, $16; intermediate, $20; standard, $23. Send for brochure giving Pullman rates. Schedule is arranged to allow ample time for photographs at all points of interest in both the U. S. and Mexico. Train will leave California three times and enter Mexico twice in one day. Total mileage, 597. Railway Club of Southern California, P. O. Box 116, Los Angeles 42, Calif.

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AND a gorgeous action-packed reel of Kodachrome color movies. Thrilling shots of trains picking water near Mt. Union, Pa., and more dynamic action is supplied near Johnstown, Pa., as Q-2, J-1 and T-1 engines strut their stuff. Older engines are also included. Prices listed.

"Fast Pennsy Trains," 100-ft. 16-mm. Kodachrome ——— $14.75
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20% less for black and white copies. Prices include postage.

FRED McLEOD
1068 Fifth St. Oakmont, Pa.

Railroad news & editorial comment

Union Pacific to add 329 miles more of CTC on Los Angeles & Salt Lake line

Union Pacific will soon have centralized traffic control on 629 miles of its Los Angeles & Salt Lake line, the entire mileage from Salt Lake to Daggett, Calif., where UP joins the Santa Fe for the climb over Cajon Pass. This will be the longest CTC installation ever made. The 300 miles from Caliente, Nev., to Daggett have been operated by CTC for the last two years. The additional 329 miles from Caliente to Salt Lake City will be controlled from Salt Lake City, and a special building is being constructed to house chief dispatchers' offices, CTC machine room, and general offices. The entire installation will cost some $6 million.

The UP's first long installation, 175 miles from Las Vegas to Daggett, was made at the height of the wartime rush on western roads. The critically important Los Angeles & Salt Lake line was handling up to double the normal traffic over its single track. The sector between Las Vegas and Daggett was the most critical because of long heavy grades. Under train-order operation some freight trains even had to carry two crews over this division to avoid being tied up by the 16-hour law. But CTC cut running time to 10 hours from a typical 13 to 16 hours. This performance under wartime conditions was so spectacular, and was so thoroughly reported in the trade press, that it gave CTC perhaps its biggest boost. What's more, it convinced UP that it should have more of the same and led to the present project of remote controlling practically the entire Los Angeles leg of the railroad.

The Portland leg of UP is also gradually being put under CTC. Already three segments totaling 338 miles are in operation in Oregon and Idaho. The main line between Omaha and Ogden is double track and so can hold its own very well even though it carries heavier traffic than either of the western legs. On single track CTC increases capacity to 60 to 80 per cent of that of double track. Generally it cuts time in transit some 26 per cent and speeds up schedules about 36 per cent. Seven out of ten possible train delays are eliminated.

All this is done by eliminating written train orders as a factor in meeting, passing, or taking siding of trains. The engineer simply watches the signals which tell him "all's clear," or "take siding," or "stop and stay." The dispatcher knows exactly where every train is at all times. The train positions are reported by lights on a track diagram, not by telephone from station operators as before. The dispatcher has remote control on all important switches and signals and thus can put trains into sidings and past each other by a flip of his finger, instead of by the tedious and time-consuming process of dictating train orders which must be repeated, double-checked and handed to the train crew ahead of time. [The operation of CTC was reported in detail, with diagrams, in our September issue.]

The total cost of UP's CTC program to date is over $13 million, according to G. F. Ashby, president.

B&O, PRR trains have phones

Mobile telephones are now in use on one Baltimore & Ohio train, three PRR trains, and one NYC train. The service was inaugurated August 15 on B&O's *Royal Blue* and PRR's *Congressional*, and a week later on the *Potomac* and *Legislator*. Such service is also used on the *Twentieth Century* between New York and Buffalo. Radio is used to connect the trains with the nearest Bell System receiving and sending station, where a hookup is made with the regular wired telephone system.

The first train-to-land two-way telephone service in the world was inaugurated April 27, 1930, on Canadian National's *International Limited* and *Maple Leaf* between Montreal and Toronto. This system used carrier-current telegraph wires running parallel to the tracks instead of the FM radio hookup used today. The service was highly popular on the Canadian trains but was dropped as an economy measure during the depression and has not been restored.

The "Gold Coast"

The *San Francisco Challenger* of the North Western, Union Pacific, Southern Pacific route has been discontinued and a new train, the *Gold Coast*, put into the

New Akron, O., station of the Erie Railroad.

Chicago-San Francisco service on the same schedule of 2½ days. The *S.F. Challenger* was the last of the coach-tourist economy trains put on by the Union Pacific in the mid-thirties to win travel back to the rails. The new *Gold Coast* is a coach and standard Pullman train, carrying Washington, D. C., sleepers in addition to Chicago and St. Louis cars. At the same time the *Pacific* was discontinued from Ogden to San Francisco, but it still runs to Los Angeles.

Railroads join Reserve Corps

Railroads of the United States were the first transportation agency to "enlist" in the army's new Organized Reserve Corps. William T. Faricy, president of the Association of American Railroads, signed an agreement with the Army Transportation Corps to sponsor three Military Railway Service headquarters and headquarters companies. Each unit will correspond to the general offices of a railroad.

The railroad is a factory

"Our railroad is as much a leading industry of your city as if we had a fixed location factory here," R. B. White, president of the Baltimore & Ohio, recently told a civic luncheon group. Later he amplified further, "The railroads were built so much before the memories of living persons that most of us regard them as we do the rivers. We feel they've always been there and always will be there, and we look upon them as something which flows through a city, rather than as part of the city."

In the very city where Mr. White made these comparisons the B&O has the largest local pay roll. Perhaps it is thought of as only a stream flowing through, but it is also a manufacturing organization. Every railroad is a factory for manufacturing transportation by modern mass production methods. The more efficiently it produces transportation the lower will be the railroad rates and the prices of everything we buy . . . and the more jobs for railroad men.

We think of a factory as a unit contained in a building. A railroad is the same sort of production organization, with machines of various sorts and with production lines at every freight yard, but it's scattered all over the map. The main difference between a railroad and a factory of the usual type is that the product of the railroad is an intangible — transportation. As Mr. White said one day during a conversation on railroad sales methods, "You buy a ride from Washington to Baltimore, and when you get to Baltimore you have nothing left but a memory."

Yet transportation has a decidedly tangible effect on our lives. It has done more to raise our standard of living than any other instrument of the industrial revolution. And the railroads manufacture not only our most economical and efficient overland mass transportation, but two-thirds of our total transportation.

Our railroad-factory may turn out an intangible product, but it's one we could not do without. And even if we finish a railroad ride with only a memory, it is usually a pleasant memory.

The Pennsylvania Railroad has installed the world's first locomotive washing machine in Sunnyside Yard, Long Island City, N. Y. The installation, 300 feet in length, will scrub, rinse and polish 100 electric locomotives every 24 hours. By reducing washing time from 2 hours 55 minutes to 15 minutes it will reduce locomotive out-of-service time; by more frequent and thorough cleaning it will cut running-gear repairs. Pantographs are lowered and loco moved through by "pig."

John Cushing Railroad quits

The 500-foot John Cushing Railroad, which serves a group of warehouses in Fitchburg, Mass., will close down permanently before next summer. The warehouses will be removed to make way for a new shopping center, so there will be no further use for the 100-year-old road.

The little electric line carries the name of its founder, John Cushing, who (among others) used to exchange passes with bigger railroads. It owns two electric locomotives but no cars, as its business consists only of moving freight cars from Boston & Maine tracks to the warehouses.

Odds and ends

The Katy (Missouri-Kansas-Texas) has joined C&O and Texas & Pacific in handling hotel reservations for travelers. . . . The extra fare on the *Twentieth Century Limited* is now $5 instead of $3. . . . Reading has discontinued passenger service between Harrisburg and Gettysburg after 63 years of operation. This section of line was chartered in 1882 as the Gettysburg & Harrisburg Railroad. . . . Santa Fe is working on a freight terminal expansion near Kansas City, Mo. It will cost between $6 million and $10 million. . . . Portable bee hives in railway express cars annually carry millions of "tramp" bees north from southern states. Cold weather kills them off.

The Wabash Terminal in Pittsburgh, damaged by an $8 million fire in 1946, will be demolished by the end of the year and a parking lot will be built in its place. The 43-year-old monument to forgotten railroad wars is owned by the Pittsburgh & West Virginia. . . . George McManus, famous cartoonist, became so interested in the unusual wall adornments in the club car *Little Nugget* on C&NW-UP's *City of Los Angeles* that he was invited to draw a cartoon to add to the display. Now Maggie and Jiggs are permanent travelers on the train.

Monon is now publishing an employees' magazine. . . . Baltimore & Ohio furthered employee relations with a pamphlet by Don Herold: "Know Your

R. W. Richardson.

Interurbans like this will no longer run over the suburban line of Youngstown (Ohio) & Southern after January 1. This is the last remaining true interurban in Ohio. Freight service will continue.

generate both 32-volt and 110-volt electricity to meet the needs of the train.

The train is traveling in overnight jumps between cities and is on exhibit from 10 a. m. to 10 p. m. six days a week.

New cutoff on NP

Northern Pacific's new 16.5-mile cutoff from New Salem to Kurtz, North Dakota, is rapidly nearing completion. The project is one of the largest of its kind in recent years. The cutoff, on the main line of the NP, will eliminate the ruling grade and restrictive curves in that area of the railroad. It will further reduce the length of line between New Salem and Kurtz and effect a saving in running time. Traffic in this heavy freight territory is predominantly eastbound, and the chief saving will be in grade reduction for tonnage in this direction. The cutoff is single track with 115-pound rail. Cost of the whole project is approximately $2,750,000.

CNJ appeals tax

Last year the Central Railroad of New Jersey organized the Central Railroad of Pennsylvania to operate its leased properties in Pennsylvania. The major purpose of the move was "to correct an unjust result arising from the application of the New Jersey franchise tax act to the Jersey Central's operations."

Now the State of New Jersey has assessed the franchise tax on the earnings of the Pennsylvania Central, and the parent road has appealed the action.

Southern may not renew lease on 205-mile line

What is the 1949 equivalent of 1899 railroad equipment? That is a problem the Southern Railway will have to solve if it follows its intention of not renewing its lease on the Atlantic & Danville Railway in Virginia and North Carolina.

Terms of the 50-year lease, which expires July 1, 1949, provide that the Southern must return the property in as good condition, and as well provided for the carrying on of business, as it was when the lease was signed in 1899. The A&D at that time turned over 26 locomotives (some wood burners) and more than 800 other pieces of equipment along with its 205 miles of line between Portsmouth and Danville, Va.

George M. Lanning, vice-president of the A&D company, says every effort will be made to keep the line operating if the Southern does not renew the lease.

MoPac fights inflation

One of the chief causes of higher prices has been the uncertainty of businessmen as to their own costs. It's not only wages but prices of materials and new equipment. The "price when delivered" clause or the "escalator" clause which allows price changes under a complicated formula means that a business must place orders without much idea of what the price will be. Executives have objected to such arrangements without effect. Now Missouri Pacific has done something. It is a large enough purchaser to carry weight with its suppliers, and has told

Stewardesses are back on the Union Pacific streamliners. The service was started in 1935 with registered nurses but was interrupted in 1941 to release nurses for war duties. Stewardesses now employed are not registered nurses, because the extreme shortage of nurses still exists. However, they are highly trained specialists who can help with child feeding, care of older people, and in other ways. The scene is aboard the City of Los Angeles.

A regular schedule is back on the Los Angeles-San Bernardino run of Pacific Electric for the first time since passenger service was abandoned in 1941. It's a railway post office train, however, and you can't ride it. Freights are all run as extras over the 57-mile route which was formerly PE's crack electric train ride. Both cars shown once were coaches running out of Portland.

Jack Whitmeyer.

these suppliers flatly that it will no longer place any orders except on a firm price basis.

Paul J. Neff, MoPac president, said, "People will rather ride in old railroad equipment and pay what it is worth than ride in new equipment at twice what it is worth. The time has come for everyone to quit asking for increases. That goes for both labor and business."

Washington & Old Dominion is 100 years old

The Washington & Old Dominion Railroad is 100 years old this year. It was founded in 1847 as the Alexandria & Harpers Ferry Line, and successively has been known as (or part of) the Alexandria, Loudoun & Hampshire, the Washington, Ohio & Western, the Richmond & Danville, the Southern, and the Washington & Old Dominion.

The W&OD was electrified during the heyday of the electric interurban, but today all operations are by diesel. Reduced traffic made it unprofitable to maintain the overhead trolley system. Passenger service was discontinued in 1941 but was restored during the war and will be continued "as long as it is reasonably patronized."

Another 100-year anniversary was celebrated September 18 at Lachine on the Island of Montreal, Canada. The Montreal & Lachine, now part of the Canadian National, was the first railway to be built on the island.

MoPac plans new yard

Missouri Pacific will build a new $2 million terminal yard at Houston, Tex. The 400-acre yard will help relieve Houston's traffic congestion by keeping 2000 freight cars a day out of downtown areas. Through freights will go around the city instead of through it. Santa Fe and Burlington-Rock Island will share use of the yard, which will be located about a mile east of Southern Pacific's Englewood Yard north of Houston.

MoPac President Paul J. Neff said the old Congress Street freight station and yard will be converted into industrial properties. The station's brick cupola has been a Houston landmark since 1895, when the building stood at the city limits. Now it is in the heart of the city.

New South American road

South America's new transcontinental railroad stretching from the Brazilian Atlantic port of Santos to the Chilean Pacific harbor of Arica is nearly completed. It crosses landlocked Bolivia and will aid that country in developing its rich oil deposits. The road is being built jointly by Brazil and Bolivia. The Chilean section from the Bolivia-Chile boundary to the Pacific Ocean is already built. The entire ocean-to-ocean railway may be completed by next year.

Conspiracy to air condition?

Out in Lincoln, Neb., the federal government is suing a group of western railroads for violation of the anti-trust laws. Among other things, it charges these railroads with a conspiracy in the middle thirties to hold back improvements in passenger transportation. Funny, isn't it, that in the late thirties the western railroads had such a marvelous reputation among travelers? People who rode the trains frequently were always saying, along about 1937 or so, "You sure can tell the difference in the trains when you get west of Chicago." If that's the result of conspiracy, maybe we need more of it.

One of the things the government says the western roads did was to agree to air condition first class cars in 1934 and other cars in 1935. Sure, we knew about it. The agreement was no secret. We read about it in *Railway Age* at the time. But it always sounded more to us like an agreement for a united offensive against the common competition, buses and private automobiles. The government attorneys call it restrictive collusion, but the results make it obvious that the roads were getting together to hold and increase their passenger traffic on a territory-wide basis. Since when is there a law against something which benefits the consumer?

When is train time?

Train gates at Los Angeles Union Station close two minutes before train time for some trains. I'll readily admit that it takes two minutes to get down the magnificent vistas of the L. A. station to the trainside, but shouldn't train time be time at the gate? Most travelers are used to getting to the gate by the time shown in the schedule and not two minutes before.

A. C. Kalmbach.

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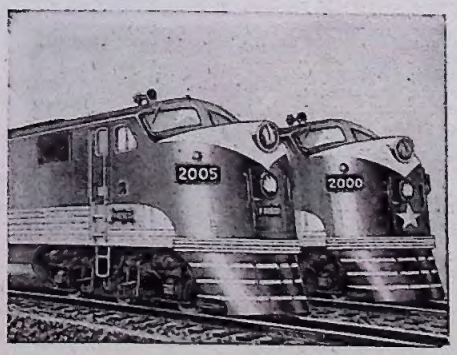

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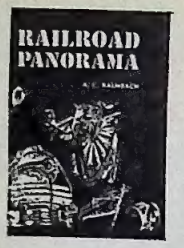

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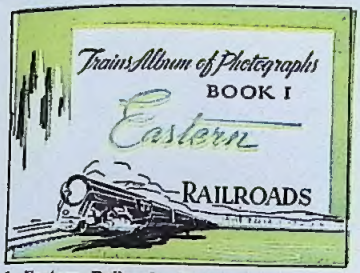

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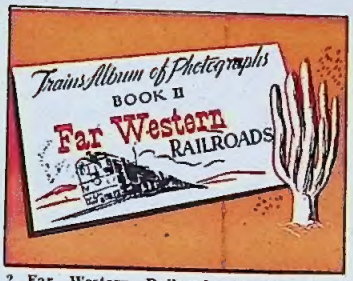

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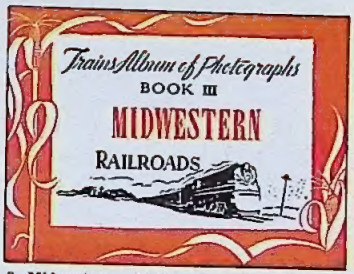

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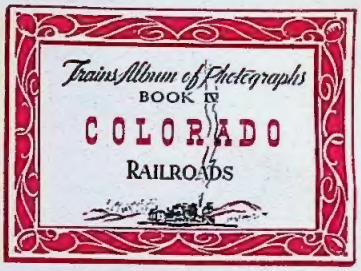

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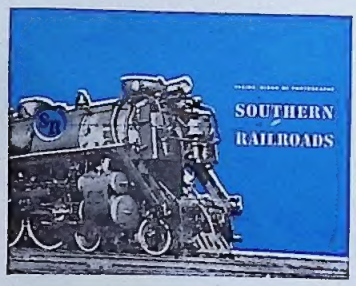

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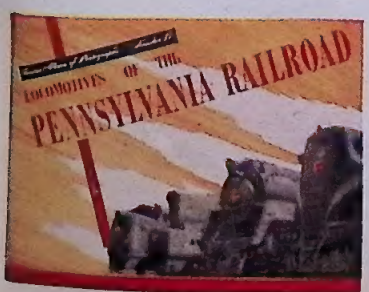

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